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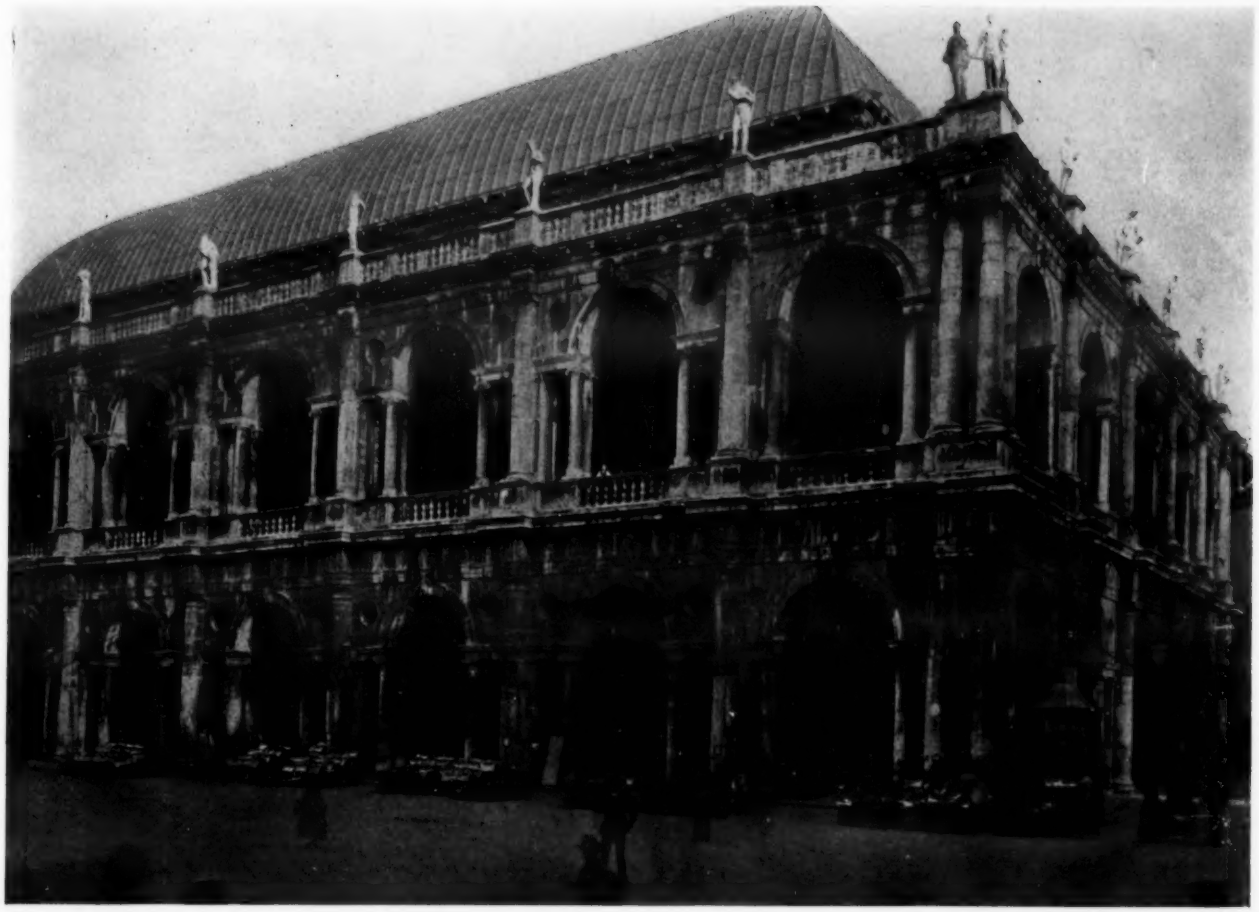

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The greatest work of Palladio and the finest secular building of the Renaissance period. The porticos surround an Italian Gothic town hall

THE AMERICAN ARCHITECT

VOL. CXV WEDNESDAY, MAY 28, 1919 NUMBER 2266

A Review of The Post-War Committee's Activities at the Nashville Convention

By ROBERT D. KOHN, *F. A. I. A.*

IT would be quite impossible in a brief article to give any adequate impression of the discussions that took place on the items of the Post-War Committee's program at the recent convention of the Institute in Nashville. The transactions of the Institute, when published, will contain a fairly complete report, but it is worth while attempting to give the impressions of one member of the committee who is very deeply interested in the whole matter.

To begin with, the convention unquestionably went on record as approving the continuance of the work of the committee. This was shown by the vote recorded on the recommendation of the Board of Directors that the Institute be allowed to draw from its reserve fund if necessary in order to carry on this work, as well as certain other important work for the coming year. The vote required a two-thirds majority. While it secured that majority by a narrow margin, a vote of 82 to 40 was really most satisfactory because of the fact that many who voted against the appropriation did so because they thought that the expenses of the committee should be drawn from current funds and not because they disapproved the committee's work. A direct and clear vote on the issue as to whether or not the Post-War Committee was to continue its investigations would apparently have secured the almost unanimous vote of the convention.

The Post-War Committee held a meeting before the convention and one immediately afterwards. At these meetings consideration was given to many hundreds, indeed possibly close to a thousand, communications received from architects throughout the country in response to the questions contained in the program. A very large share of these replies came from men who were not connected with the Institute, thus indicating that the inquiry had aroused a very general interest on the part of the profession at large. The three sessions of the convention particularly devoted to a discussion of the various items of the program were full of interest and in the opinion of many of those present brought out the most vital and lively discussions that have been heard for many years.

There was considerable delay in getting to the subjects assigned for the first evening session because a good part of the time allotted for the meeting was taken up by an admirable address delivered by Mr. John Bell Keeble, a distinguished attorney of Nashville. His professional message was inspiring and dealt principally with the distinction between the business attitude and the professional attitude toward life. His analysis of the social point of view in the practice of law and architecture was most welcome and highly appreciated.

Mr. Dunning's admirable introduction to the detailed discussion of the Post-War Committee program, followed by an address by Mr. Medary of Philadelphia, the chairman of the evening, set the pace at so high a standard that it was really difficult thereafter to get the modest delegates to express themselves freely. Before the evening was over, however, an enlightening debate had taken place on the possibilities of expansion of the architect's service, the self education that comes through his greater participation as a citizen in public work, and the methods by which he can make his importance in relation to the problems of building more quickly felt. There was no attempt on the part of the speakers to place the architect on a pedestal as a perfect being and to blame the public for all the ills of the profession. There was hardly a speaker who did not frankly say that the architect would have to make his own services more efficient and more complete if he wished to put himself right with the public.

Owing to the desire of the convention to give an earlier opportunity for the discussion of educational problems than had been provided by the program,

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the session originally arranged for the evening of the last day, and which was to be devoted to the subject of education and registration, was advanced to the afternoon of the second day. There were present not only the regular delegates to the convention but a large number of men connected with various universities and schools where departments of architecture are now already established. The report of the Committee on Education, signed by Mr. Ackerman, Mr. Medary and Mr. Dwight Perkins of Chicago, awakened great discussion, both for and against the principles maintained by the committee. The report attacked the problem in its fundamentals. It pointed out that the faults of our architectural schools are also the faults of our whole system of education. The common and secondary schools and our universities do little to develop independence of thought on the part of their pupils, and so the men who then study architecture have no adequate foundation to work on. Our schools of architecture, it was claimed, are bound by traditional methods of teaching and are out of touch with reality. They do little to give their students a sense of social responsibility and so their methods and their ideals are in need of radical change.

It was interesting to note the varying points of view expressed on the floor during the debate. There was no attempt to deny that the men going through our architectural institutions are inadequately trained. Some claimed, however, that it was impossible to teach men in any institution under any system so that they would be capable of practicing architecture efficiently when graduated. Some of the speakers claimed that the methods of teaching are right in principle, but need more thoroughness in application; that a longer period of instruction is essential; and that the men should be required to go through a number of years of practical training after graduation before being allowed to practice. In this connection the discussion on the value of the registration of architects was interesting. Mr. Waid clearly pointed out that when the standard of qualifications set for registration in the various States was placed sufficiently high, then registration would be an important element in the educational problem. Many who had rather grudgingly agreed to registration laws merely as a means to prevent the obviously inefficient from practicing now recognize that in some States registration has actually raised the educational standards of the profession.

Throughout the entire discussion of the problems of education there was displayed a very broad-minded willingness on the part of teachers to accept constructive suggestions for reform. They seemed to realize the justice of many of the points made in the report on education, and so expressed themselves, saying that they welcomed this analysis of their problems. What they did urge, however, was that they might have the help of the members of the profession toward securing constructive reforms, not the least of which would be in the placing of architectural schools in a position where they would be independent of the schools of engineering, which in some cases still controlled their policy. Any tendency that the debate might have had to become acrimonious was prevented by an exceedingly amusing paper read by Mr. Magonigle, in which, among other things he listed the colossal number of subjects in which the architect is supposed to be proficient. On the whole the discussion was very well worth while, and indicated certain constructive lines of study which the Post-War Committee will now follow up.

The evening session of the second day was very well attended, and started off splendidly with the report of Mr. Russell of St. Louis on the recently organized National Board of Jurisdictional Awards of the Building Industry. This Board has been recently created to pass on all questions of trade jurisdiction in the building industries. It owes its existence in a great measure to the efforts of the American Institute of Architects, and indeed it is the first formal and definite act of participation on the part of the architectural profession in questions of adjustment between employers and employees in the building trades. The membership of the board includes representatives of the building trades department of the American Federation of Labor, the Associated General Contractors, the National Association of Builders, Executives of the Engineering Council, and the American Institute of Architects. The organization of the board seemed almost like a direct answer to that question in the Post-War Committee's program, which referred to the need for closer co-operation on the part of architects with the men who execute their work. Nothing was more stirring in Mr. Russell's report than the expression of his conviction borne of experience that the step taken by the architects in this matter was most welcome to the Federation of Labor, and secondly that there already were evidences that all the interests represented in the board would benefit by the co-operation thus established, particularly in the way of enlightenment and understanding.

Under the head of item K of the program, Standardization, Mr. Boyd presented an interesting paper in which he indicated the ways in which certain forms of construction might be standardized along the lines established by various Govern-

ment departments during the war. An interesting letter on the same subject, written by Mr. C. B. J. Snyder of New York, in a great part confirmed the position taken by Mr. Boyd.

The major part of the evening was devoted to topics L and M of the program. The former raised the liveliest discussion as to the best and most desirable form of architectural societies. There seemed to be a very general agreement that the proposed action of the convention in encouraging the formation of State Associations had been justified. Illinois gave very interesting reports as to the effectiveness of the State organization—how it supplemented the work of the Chapter and supported it in every way and yet had developed an independent force of its own owing to the co-operation of great numbers of architects throughout the State, who for one reason or another were not directly associated with the Institute. There were interesting reports from Kansas and Pennsylvania, Ohio and New York. Delegates of the two latter States indicated that they are even now taking steps to reorganize their existing State Associations, making them independent of the Institute so as to take in on the basis of comparatively small membership dues all those architects who are qualified to practice, but who by reason of their distance from the principal cities or for financial reasons are not now connected with any architectural society. Ohio was apparently hesitating as to the advisability of this step, but delegates from New York reported that preliminary notices had already been sent out for a meeting to be held in Utica on the 7th day of June to form a new association.

Under the last topic, M, the subject of competitions was very thoroughly debated. Prof. Laird presented an interesting resumé of a statement on the subject which he had prepared for the Philadelphia Chapter. His opinion was on the whole favorable to competitions as being both the best means for selecting an architect and for getting the best architectural result. This stirred up a mighty discussion, some holding that results of competitions were rarely satisfactory either to those who participated or in the design of the structure resulting therefrom, some contending that they were a necessary evil, and others holding that they were an entirely unnecessary evil. There was no doubt that the members agreed that the principle of regulating competitions cannot be questioned; that is to say that competitions if held must conform to the code set by the Institute. One of the most interesting remarks made during the evening was that of Mr. Mauran of St. Louis, who told of a case in which his firm had been invited to compete for an important building and had declined on the ground that the character of the building was such that a competition could hardly elicit satisfactory results because the problem needed intimate conferences between the owners and architect. In this particular case the owners had abandoned the idea of a competition and had awarded the work to Mr. Mauran's firm, whereupon they prepared quite a number of different schemes for the same building, developing, in other words, a series of sets of competition drawings themselves for their client's consideration. These different sets were then presented one after the other in the order of their development, and each in turn was declared by the client to be acceptable until the last in the order of development was acknowledged to be superior to any of the others. It was evident that in this particular case no competition could have produced a result so directly the effect of the conferences that had preceded the development of the plan.

Those who were most insistent on the value of competitions were perfectly ready to acknowledge that everything lay in the wisdom of the program and the wisdom of the jury, but the critics were quick to point out that if the program were properly written; that is to say that if the professional adviser had really studied the problem so as to include within its fundamental conditions the essentials to a satisfactory solution then the program itself would solve the program. On the whole, delegates from the eastern and central sections of the country were generally of the opinion that competitions are to be discouraged, but that in any case the standards must be maintained, insisting that the programs must be carefully drawn and the jurors carefully selected, while the delegates from the West and the South, with the exception of San Francisco, clung to the competition as their only hope against deplorable public architecture. These parts of the country hold that in the last few years the competition program of the Institute has greatly helped in clearing up the situation with regard to public work, and that for a great many years to come they will wish to continue the valuable educational influence which has come through its enforcement.

Quite aside from the three main sessions of the convention devoted to the Post-War program, the subjects covered by that program were constantly brought up in the course of other debates. While delegates from some of the big cities seemed to think there was nothing very important so far in evidence as the result of the committee's work, delegates from the rest of the country were unquestionably enthusiastic about the possibilities of this Post-War effort. The remark was common that the Institute had really thereby struck its gait and was

making itself of great value to the profession. Everyone wanted to know in what form the result of the investigation would be sent out, and offers of assistance and co-operation were received from innumerable sources.

On the whole the results of the discussions at Nashville were exceedingly helpful, and will undoubtedly help spur on the Post-War Committee to carry on its formidable task during the coming year with renewed energy. Its greatest hope must be that it may be able to help in the development of a public opinion within the profession as to the lines along which the practice of architecture ought to grow so as to become efficient in the public service.

The Registration of Architects

Remarks by D. EVERETT WAID, *Treasurer, American Institute of Architects, before the Nashville Convention*

THIS subject is a matter of present importance for the reason that perhaps a dozen States now have registration bills under consideration, and double that number are likely to pass such laws in the near future. For the good of the public and the credit of the profession, it is the duty of every Institute member to be prepared to oppose every bill drawn on a wrong basis and to be ready to fight for certain fundamentals which, if not provided, would mean the defeat of every State law proposed.

Our chief danger lies in the fact that selfish self-protection is the impelling motive most certain to initiate registration or license laws. Architects chafe when they see incompetent, conscienceless persons design buildings and impose on the public and the qualified practitioner by calling themselves architects and walking away with the commissions.

The first impulse is to say "bar such people by means of a license law." Such a method of meeting competition is a mistake and in the end brings trouble. As members of the American Institute of Architects, we should have the vision to work on a higher plane; we should have the foresight and energy to take the lead and act first, and not wait until we have to correct the missteps of others.

Our primary motive and object should be to make ourselves competent rather than to condemn the incompetence of others. A registration law should be an instrument for educating architects, not for placing a ban on a poor carpenter or an enigneer who wishes to design a building. Druggists or practical nurses may advise a remedy for a cold; but they cannot call themselves doctors without first passing examinations which test their actual qualifications. A real estate man may give a sound opinion on a legal question or conduct his own legal operations, but he has no standing in court until he has acquired certain general and technical education and experience.

A professional man or an artist must excel in his particular line of work and be a real expert as compared with the laity or those in other professions, or he will bring discredit upon himself and the profession of which he pretends to be a qualified member.

Let us impress upon ourselves and every architect the fact that each State in the Union is going to have a registration law. That being the case, whether we feel any personal interest in registration laws or not (at any rate it should be an unselfish interest) let every member of the Institute stand for three things:

First—that every architect to win his title should have a general education equal to or a little better than that of the average well educated citizen, plus an adequate technical education.

Second—That present practitioners may continue to practice by legal right and that the Board of Examiners shall not be forced to give them certificates of competency unless they prove their qualifications.

Third—That all the States shall aim at some uniformity of standards and to that end all prospective legislation be submitted through *The Octagon* to the Institute Committee on Registration.

Since the last convention a new kind of legislation has been evolved. That is joint registration of architects and engineers. Three States have formulated bills of this kind: Ohio, Indiana and Michigan, and others are likely to follow, creating Boards of Examiners and Registration made up of members of both professions. In one State the bill provides for a board of examiners made up of one architect and two engineers. Think of the architectural standards of a State being placed in the hands of one architect, doubtless a political appointee, a mining engineer and an electrical engineer!

The American Institute of Architects has declared in favor of association with engineers on a basis

which will insure friendly co-operation and not competition. But this bill may be regarded as a grave mistake which threatens to place the artistic quality of architects' work, in the eyes of the public, on a lower plane than ever.

The Board of Directors appeals to all Chapters to send a copy of every registration bill to *The Octagon*. Prompt action may prevent ill-considered legislation which would hamper the best efforts of our profession for years to come.

Notes from London

By SELWYN BRINTON, *Special Correspondent to* THE AMERICAN ARCHITECT

The housing question, to which I have alluded in my previous notes, now seems to be taking a definite shape under the pressure of the Government Housing Bill, whose main provisions I have already detailed. On all sides there are signs of movement. At Roehampton, near London, the Dover House Estate is being acquired at a cost of £20,000; but as this is a very desirable location on the high ground adjoining Putney Park it is suggested that this should not be developed exclusively as a working class estate.

At Brighton it is proposed to erect 800 houses on the Moulscombe Estate, and it has been found that the expenditure as contemplated works out at £900 each, instead of the estimated £700, representing a rental of £1.12.6 per week. As the prospective tenants are not expected to be able to pay more than 12/6 weekly, there will be a balance of £1 to be paid "from some source other than the rental"; and the Brighton Housing Committee assumes that the Government will "contribute an annual sum representing the difference between the rent actually obtainable and the amount of the outgoings, less the proportion of the amount produced by a one penny rate."

Apart from this, as this estate will not be available until after inquiry and arbitration, the Brighton authorities are constructing fifty houses for the discharged soldiers, who are working at the new diamond cutting industry which has been started in that town; and Professor Adshead, F. R. I. B. A., is now preparing an estate and development plan for this last proposal.

These are only instances of what is going on all over the country. The recent statement of the Local Government Board reported that by the end of March 658 housing schemes had been submitted by 358 local authorities in England and Wales for the Board's approval, most of these schemes being in the initial stage of a site having been submitted for approval.

(From The Builder)

PROPOSED HALL, BISHOPS STORTFORD COLLEGE
H. C. IBBERSON, *ARCHITECT*

Housing is certainly a national necessity at this moment; but it is evident that the total expenditure is going to be enormous, and the class which is going to benefit most ought to take its fair share in meeting this. Take the Brighton (Moulscombe Estate) instance above mentioned. It is within the knowledge of the writer that in that district quite good residential houses could be obtained recently at a rental value of less than £40 a year. The weekly rental of £1.12.6 amounts to about double this, and obviously for the class of houses required is simply preposterous. It amounts to plunder of an already overtaxed community; and not only what are called the professional classes, but the skilled technical workers and managers are rising in protest. At the recent In-

dustrial Conference a well-dressed man stepped on the platform to propose that "the National Industrial Council take into consideration the position of unions composed exclusively of the technical and administrative grades, and determine how such unions shall be represented." It is significant that in the recent annual meeting of the Association of Chambers of Commerce at which one hundred Chambers were represented, the London and Luton Chambers joined in a unanimously adopted resolution that the House of Commons should resume control of public expenditure, and that the present unemployment donation, vicious in principle, and which is hindering the resumption of work, should be abandoned at the earliest possible moment. "The underlying principle," it was remarked, "that seemed to obtain with the gentleman responsible for creating new ministries, departments and controls, was that of the spendthrift. They had been ready to adopt all sorts of wild and risky experiments; and the last consideration that entered into their heads was where the money was to come from. The unemployment donation scheme had been conceived in a hasty and reckless manner. It was demoralizing and degrading to pay men and women for doing nothing."

Fig. 5 A.

Fig. 8 A.

Fig. 6 A.

Fig. 10 A.

Fig. 7 A.

Fig. 11 A

The figure-numbers correspond to the numbers on the Plans on Page 741.

THE ENGLISH FIVE-ROOM COTTAGE

I have made it clear in my previous treatment of this subject that my criticism is directed against

(*From The Architects and Builders Journal*)

THE FIVE-ROOMED COTTAGE
Its planning analysed.

In the details of these typical plans, wherever possible, the Wash-house does not open into the Living Room.

In order to avoid confusing the plans, cupboards, of which there should be one in each bedroom, are not shown.

Floor areas have been calculated inclusive of chimney-breasts.

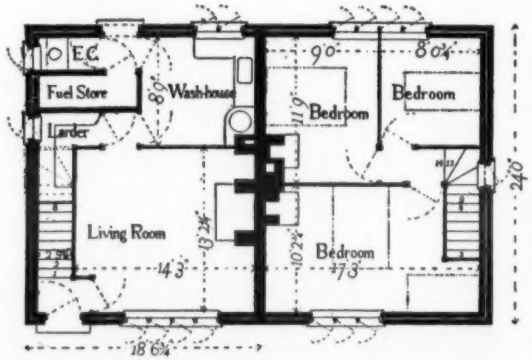


Fig. 1 *Common Victorian Plan.*

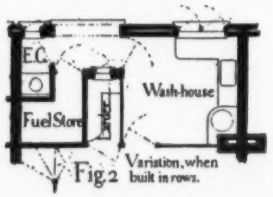


Fig. 2 Variation, when built in rows.

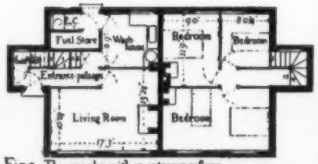


Fig. 3 The same plan, with an entrance-passage.

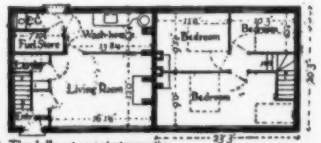


Fig. 4 The shallowest convenient proportion.

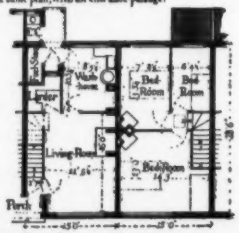


Fig. 5 The narrowest convenient proportion.

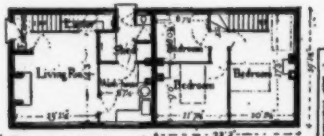


Fig. 6 Cottages joined together endwise.

	Fig. 1	Fig. 2	Fig. 4	Fig. 5	Fig. 6
Total area, within walls	376¼	448¼	400¼	388	375¼ sq. feet
Living Room	183¼	202¼	193¼	183	177¼ "
Wash-house	76¼	78¼	88	88	77¼ "
Bedroom 1	158	175¼	163¼	167¼	156¼ "
Bedroom 2	105¼	105¼	100¼	105¼	104¼ "
Bedroom 3	70¼	70¼	66	66¼	69¼ "
Span of roof, between walls	22¼	22¼	18¼	26¼	17¼ feet

THE AMERICAN ARCHITECT

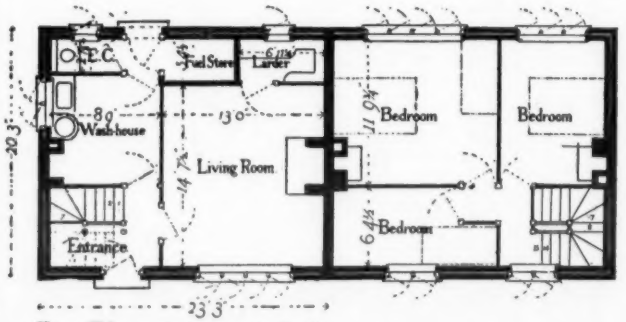


Fig. 7 *Plan with staircase in front.*

When built in rows, the wash-house reaches to the back, and the E.C. is added, as in Figure 5

Fig. 8 Elongated Variant of the same plan.

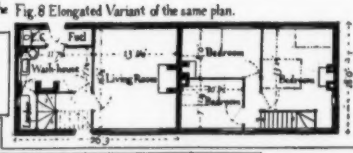


	Fig. 7	Fig. 8
Total area within walls	403	449 sq. feet.
Living Room	190	211¼ "
Wash-house	76½	83¾ "
Bedrooms	153·99¼, 73¾	100¼, 105·79¼ "
Span of roof, between walls	18¾	16½ feet.

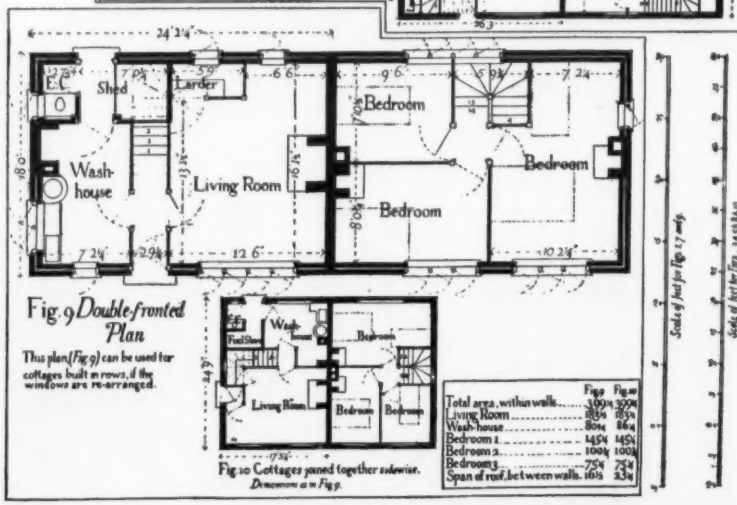


Fig. 9 *Double-fronted Plan*

This plan (Fig. 9) can be used for cottages built in rows, if the windows are re-arranged.

Fig. 10 Cottages joined together endwise.
Dimensions as in Fig. 9.

	Fig. 9	Fig. 10
Total area, within walls	390¼	390¼
Living Room	185¼	185¼
Wash-house	80¼	86¼
Bedroom 1	145¼	145¼
Bedroom 2	100¼	100¼
Bedroom 3	75¼	75¼
Span of roof, between walls	16½	23¼

the methods, not the principle, of the housing scheme; and it will be of interest now to study the practical question of how—given the site and the difficult problem of funds—the actual house is to be planned.

The discussion which has been raging for months upon this interesting question seems to have centered around two special points. The one is what has been conveniently christened the "parlor question"; the other turns on the no less harassing problem of the worker's—and his family's—personal ablutions.

I myself incline to favor the parlor for two reasons. One is that I have found, among my workingmen friends, a strong feeling to have some place set apart to receive the honored guest and to be a shrine for their household gods. That these household gods may take the form of wax flowers, china dogs or other objects not equally admired in the most cultured art circles, does not matter; their value is in the eyes of the possessor—and they are often very dear to him.

Mr. Goodhart Rendel, in his interesting contribution to *The Architect's Journal* on "Planning the Five-Roomed Cottage," has indeed scant mercy for such sentimental considerations, though he admits their existence. "This is not the place," he remarks, "to argue the vexed 'parlor question,' if indeed it be a question at all. From various causes a great many cottages are built—and will be built—without parlors, and it is with the plan of such as these that this article is concerned. . . . Having then reluctantly denied to our tenant a shrine for his domestic gods, we must furnish his actual needs: a room to live in, some sleeping-rooms and a washing place for his crocks and linen. Besides these, he must have a store for food, and a sanitary convenience. The living-room, if it is really to be the place where he lives, should be the cooking-room in winter, but not in summer; the washhouse should contain the stove for summer cooking. Without this provision, in hot weather the family will sit in the washhouse."

As regards aspect, the writer wishes his cottage living-room to face as near southeast as possible, and suggests ventilators, instead of a window, in the larder, if it faces south or west. The aspect of the washhouse is unimportant; that of the larder, and its proximity to the closet, is material, and in his Fig. 1, which is of the type known as the "Common Victorian Plan," we see it separated by the fuel store. We have now arrived at the bath question, which—almost as much as the parlor—has been a source of conflict, the trouble being whether it shall be upstairs, or downstairs in proximity to the washhouse. The English cottager, as a rule, is stated to have his "tub" before the kitchen fire, when the family have gone to bed, but this does not apply to such work as miners, who must have a bath when they come in dirty, and for whom the best arrangement would be clearly downstairs.

A very real problem—which Mr. Goodhart Rendel scarcely touches—is the question of fuel economy; but he does suggest in this direction that the bath and copper should share a small apartment screened or walled off from the scullery, so that

Fig. 1 A.

Fig. 3 A.

Fig. 4 A.

The figure-numbers correspond to the numbers on the Plans.

THE ENGLISH FIVE-ROOM COTTAGE

the copper can heat the bath water at the same time. His plan will allow of three bedrooms and a fair-sized living-room, without the screened off room which has been elsewhere suggested; in the figures given he refers to the "Common Victorian Plan," shown in 1-5, that of Fig. 7, and still more the double-fronted plan of Fig. 9, which he considers the best, and which he notes can be rearranged for cottages built in a row.

It is interesting to compare this well-thought-out plan of the five-roomed cottage with Mr. C. F. A. Voysey's interesting article in *The Builder* of April 18 upon "The Artisan's Cottage." Upon two of the points which we have just noted his view is entirely different. "Every house," says Mr. Voysey, "should have its copper; but the idea of giving every artisan a fixed bath is extravagant, unnecessary, and often futile. He does not want to wash all over every day, so the labor of carrying up a can of hot water to a hip bath is comparatively small." Again, upon the "parlor question," his attitude is, if not hostile, at least unsympathetic. "There are many points both for and against. Beginning with the points against, the first is the great additional cost. Space, material and labor are expended on the parlor, which is often only used on state occasions. . . . This room is frequently shut up for weeks together, and has a characteristic odor about it that suggests intermittent life. It has a coldness as of death. But it feeds the vanity of the tenant, and his head swells at the thought of his parlor gentility." But the writer admits that it often comes in very opportunely for the lodger, who is a most important factor in British lower-class life, and that even apart from its advantages as "a museum of photographs and wax flowers and a meeting-place for social affairs" it may be utilized for dressmaking or study, which must be all but hopeless in a living-room filled with clamorous children.

(From The Architect's Journal)

1.—PERSPECTIVE VIEW OF THE GRAND COUNCIL CHAMBER IN THE OLD PALACE, FLORENCE

(From an Engraving by Famin and Grandjean)

DETAIL OF ONE OF THE SIDE ALTARS OF THE CHURCH OF SAN JUAN DE DUERO, VALLADOLID, SPAIN

SANTA MARIA LA ANTIGUA, VALLADOLID, SPAIN

(From The Architect)

SECRETARIAT BUILDINGS, DELHI

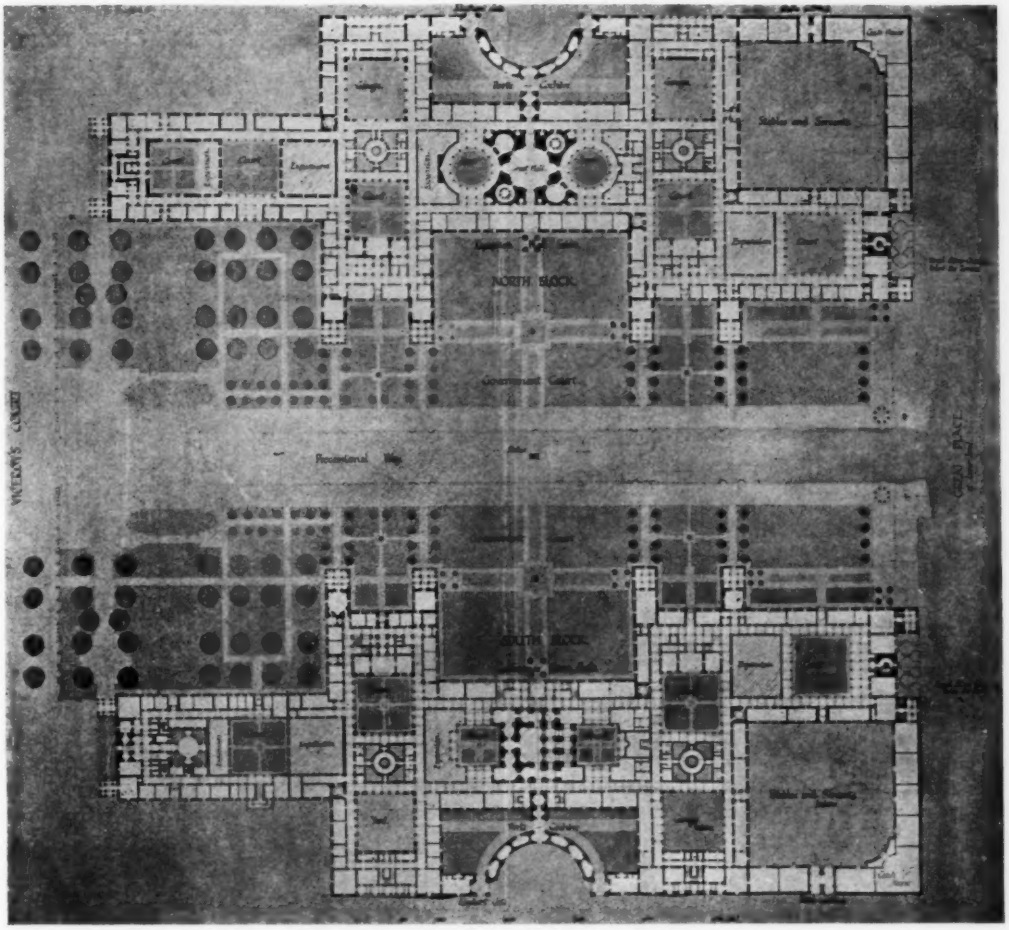
North and south side entrances, and detail of gateways to the side entrances.

HERBERT BAKER, F.R.I.B.A., *ARCHITECT*

I leave now the homelier theme of English cottage accommodation to turn to Imperial Delhi, that ancient capital of India, which is now being replaced in its high estate, which it possessed as early as 1193, when it became the capital of the Mahomedan Indian Empire, and was restored to that position under the Moghul Empire between 1638-58.

and Sir Edwin Lutyens, whom I met at Rome in 1911, is a designer of great imaginative grasp.

There has been a strong feeling in England, as well as India, that these designs should appropriately follow the characteristic lines of Indian architecture; and it will be seen that this feeling has not been overlooked in the proposed Government buildings.



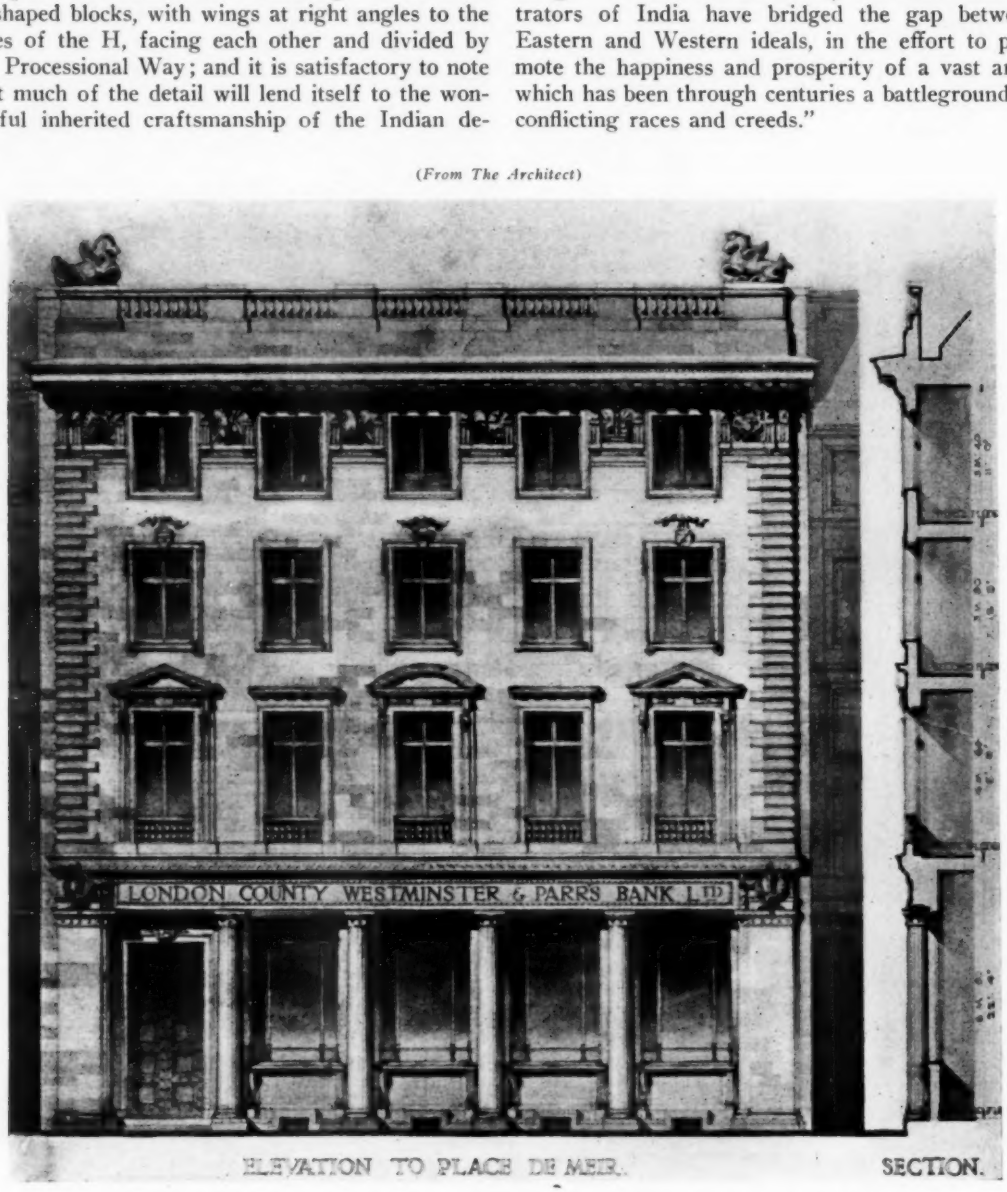
SECRETARIAT BUILDINGS, DELHI. HERBERT BAKER, F.R.I.B.A., *ARCHITECT*

In a recent number of *The Architect*, which commemorates—from March 27, 1869—fifty years of that journal's successful career, the plans proposed by Sir Edwin Lutyens, A. R. A., and Mr. Herbert Baker, F. R. I. B. A., as principal architects and architectural advisers to the Government of India, are shown in an admirable set of illustrations. Mr. Baker is well known for his Government buildings at Pretoria and his monument to Cecil Rhodes;

Government House itself consists of a central block—about 255 ft. by 300 ft.—connected to two western and two eastern wings, beneath which are triple carriage ways. The principal approach from the east is by a great columned portico, 120 ft. wide, with steps broken by landings leading up to the principal floor; and the central feature is the great circular Durbar Hall, some 70 ft. in diameter, whose dome forms a center to the whole

group. The Secretariat buildings form two H-shaped blocks, with wings at right angles to the sides of the H, facing each other and divided by the Processional Way; and it is satisfactory to note that much of the detail will lend itself to the wonderful inherited craftsmanship of the Indian design in much the same way that the administrators of India have bridged the gap between Eastern and Western ideals, in the effort to promote the happiness and prosperity of a vast area, which has been through centuries a battleground of conflicting races and creeds."

(From The Architect)



ANTWERP BRANCH, LONDON COUNTY, WESTMINSTER & PARIS BANK

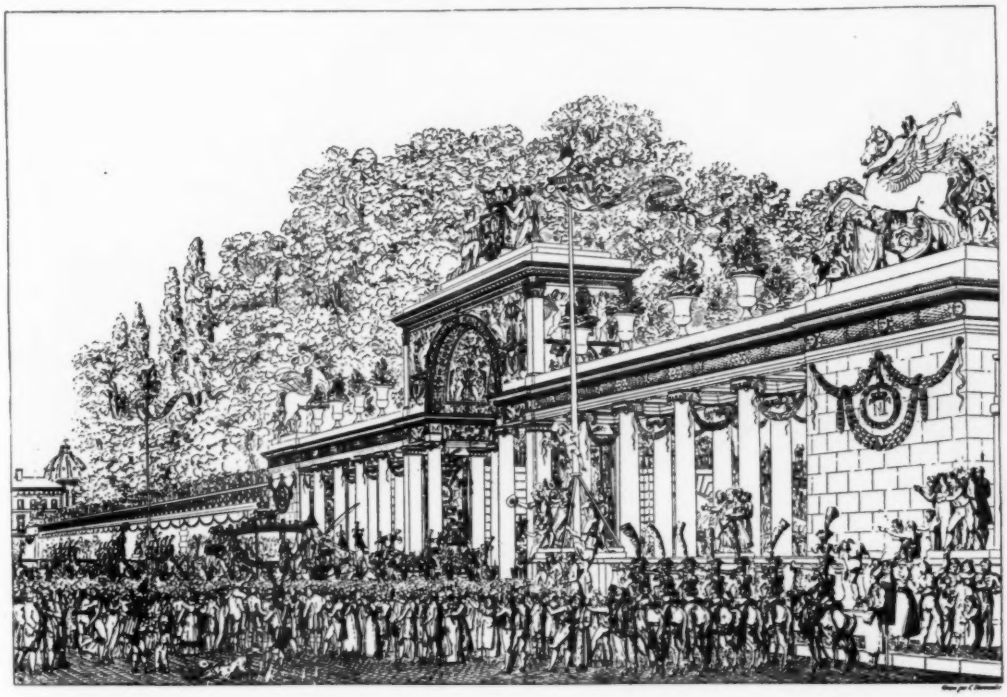
MEWES & DAVIS, *ARCHITECTS*

signer. It has been remarked that a difficult problem—to design a building on general classical lines which would at the same time express the spirit of Indian design—has been successfully solved. "What Sir Edwin Lutyens has done is to bridge successfully the gap between Eastern and Western

A strong appeal has been made by Sir Sidney Colvin for public support to the acquisition by the Board of Education of the fine collection of casts and moulds, from Messrs. Brucciani, the well-known London "formatori," who are now in difficulties owing to war conditions. If this collection

is acquired it will be used for purposes of art education by the Board, with the assistance of the Victoria and Albert Museum; and Sir Sidney says very truly that "It is well known that the provision of facsimile reproductions of sculpture and architectural detail is a prime necessity for practical teaching in art schools and historical and comparative study in museums of art," adding that "this necessity has never yet received from our Government the consideration which it urgently demands."

(From The Architect's Journal)



STREET DECORATIONS FOR PEACE: A FRENCH EXAMPLE OF THE EMPIRE PERIOD

I felt this very strongly when recently in Spain I came upon the admirable "Museo de Reproducciones Artisticas." Such a museum is, in fact, of priceless value both for the student of architecture and of sculpture. If it were to be undertaken in America it would surely be very efficiently carried through; and I hope to return to this again in a later letter.

Spain is indeed a country of surprises; she is often as astonishingly modern as she is overwhelmingly antiquated! No color magazine, for instance, in Europe in general quality can compare with *La Esfera*, and its architectural reproductions—from which I give two—are always extremely well chosen. "La Antigua"—or to give its full title, "Santa Maria la Antigua"—at Valladolid, is one of the most ancient churches in Spain, and Mr. Street gives three pages to its beauties, describing in detail its finely groined interior. The "fine Western steeple," to which he also alludes, was, I regret to say the only part of the grand old building still upright when I recently visited Valladolid; and the work of "restoration" which was going forward alarmed me and was enough to make the author of "Gothic Architecture" to turn in his grave. Soria I have not yet visited, though I had great accounts in Spain of its wonderful remains. The Church of San Juan de Duero, which was formerly a convent of the Templars, is without the city and picturesquely situated; the character of its architecture is Romanesque.

With peace in prospect the subject of war decorations is occupying the public mind; and it is interesting to note what has been recently achieved in this way by Messrs. Selfridge in Oxford Street and what was done in the old days of the Napoleonic Empire.

The Royal Academy is now taking the question

of war memorials in hand, and is organizing two exhibitions, the first to be held at the Victoria and Albert Museum in June next, and to comprise selected examples of memorials executed in past and recent times by deceased and living artists. The second section will be held at the Royal Academy in October, and will consist of new designs for war memorials in any class of art or craft, with a view to the circumstances of the present war.

The 151st Exhibition of the Royal Academy promises, under present conditions, to be one of exceptional interest.

(From The Architect's Journal)

THE TAYLORIAN BUILDING AT OXFORD. C. R. COCKERELL, *ARCHITECT*

From the drawing by Hanslip Fletcher

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VOL. CXV MAY 28, 1919 NO. 2266

Mr. Kohn's Review

THE lucid review of the sessions of the Post-War Committee on Architectural Practice during the recent convention of the Institute at Nashville, prepared by Robert D. Kohn, a member of the committee, and presented in this issue, will repay very thoughtful reading.

The responses, numbering into thousands, received by the committee indicate how widespread is the interest in its work and prove conclusively that this interest is not confined to Institute membership, but that a very large share of these replies were from men who are not affiliated. This indicates the representative character of the committee and should insure the widest measure of support by architects everywhere in this country as well as by the many men whose work brings them closely in touch with the architectural profession.

Probably no movement thus far set afoot in the profession of architecture offers possibilities for so large a measure of fruitful accomplishment. In it there are to be found the elements of all of the possibilities for expansion of the service that architects may properly render—"the self-education that comes through participation as a citizen in public work and the methods by which architects can make their importance in relation to the problems of building more quickly felt."

THE time has now arrived when the profession of architecture must unite in an effort for the stabilization of all the elements that affect the profession. Prejudices, small jealousies, narrow-minded points of view should all be brushed aside and the upbuilding process swiftly advanced by a strong and unanimous effort.

Whatever shortcomings there may have been attributed to the Institute, it is quite clear that the organization is now pledged to a policy that should enlist the warmest co-operation. The very favorable attitude of the convention toward the matter of State architectural associations indicates the democratic and constructive spirit that now rules. These organizations while at present limited to comparatively few States, are to be encouraged as a means of securing the affiliation of those architects who are qualified to practice, but who by reason of their distance from large cities are not now a part of the organized profession.

It is a source of satisfaction to learn that the development of State societies is so favorably regarded, and it is to be urged that no time be lost in the matter. There are wide fields of endeavor for both the Institute and State Societies, and their harmonious working toward the common good would accomplish many desirable ends.

IN no topic discussed during the committee's sessions was there a more widespread representation or a more unanimous opinion than in that of architectural education. Much good will come of the efforts that are now being put forward to place on a more practical basis the curriculum of our architectural schools. This effort will be, if carried forward under the control of the profession, one for more far-reaching good than any of the many that are now under consideration.

The period of architectural construction in its most practical form has now begun. To let it lag for want of a strong and concerted effort would be an unfortunate thing. We shall need, in order to push to completion the essentials of this Post-War Program, all of the effort of the Institute, of every State Society, of all the architectural clubs, and also every man who has the good of his profession at heart, whether he belongs to one of these organizations or not. And, if he does not, he certainly should, for it is a most selfish attitude supinely to await the efforts of others in these great problems of reconstruction. They are not for the benefit of just those who most strenuously promote them but for architects everywhere.

What An "Open" Market Means to Building

NOW that there are to be no further attempts to stabilize commodity prices—the result of the conference recently held in New York City between the Industries Board and the steel industry which forced an "open" market having created an unmistakably better feeling—it is to be hoped that the Government's tinkering with business is at an end and that the progress of construction will be allowed to resume its normal cadence.

Just how firmly the restriction has been while the Industries Board and Railroad Administration were at deadlock is shown in practically every large municipality where all but the more daring speculators and those soundly financially backed were hesitant about proceeding with building projects. The Government's apparent disregard of the fundamental principles of economics in strangling the always present law of supply and demand and the substitution of a price fixing policy, did more than any other one thing to retard the needed impetus that should long ago have been given post-war construction.

Not until the Railroad Administration refused to order steel rails at the price fixed by the Industries Board was an effort made to put an end to such ill-advised procedure. The Railroad Administration's attitude in the matter has not received proper recognition, due possibly to the fact that its reasons for taking the stand it did were not made public. Industry consequently has just had to surmise that it was done to prevent possible violation of the Sherman Act.

In explanation of the retirement of the Industries Board it was stated that the board had for its object the resumption of construction and production through the stabilization of prices. The legal phases of the question as raised by the Attorney General's comment on the legality of price fixing failed to disturb the opinions of the Secretary of Commerce who referred to the opinion of the Attorney General as negligible. It was contended the results sought could have been obtained without violation of the Sherman act, as the plan was to ascertain and make public fair prices reached by agreement.

Subsequently another effort was made to fix the price of steel, but when the leading corporations proved to the Industries Board that no further reduction could be made without a reduction of wages, they won their fight for an "open" market. But in the meantime it has been business that has been held up, as usual.

In the past it has been very clearly demonstrated that American business men can always find a way to solve problems that may confront them no matter how difficult they may appear. There is no reason to believe that they could not have worked out the solution of reconstruction period business difficulties had they been given a free hand and assurance that there would have been no crossfire interference by Governmental departments. Recently the Administration has been getting a dose of its own medicine, but, of course, at the expense of business.

No better illustration of the futility of the Administration's efforts to tinker with business can be had than the recent Navy Department experience. Over a month ago the Navy Department requested bids on 20,000 tons of steel, and on opening the orders found that each of the fourteen companies had submitted the price fixed by the Industrial Board. Naturally, the bids were rejected as being non-competitive. Last week, on opening bids on another lot of plates, the same situation was found to exist. The bidders either referred the Navy Department to their bids of early April, or put in new offers amounting to practically the same thing.

As far as the Navy Department is concerned, action has been taken under authority conferred by war emergency legislation by placing an order, or what amounts to a requisition, for 14,000 tons of steel with the Carnegie Steel Company. Decision to requisition the steel was the result of a conference on how to meet the situation when it was found that the bids submitted were the same as the bids previously submitted, and which were based on prices agreed upon between the steel manufacturers and the now abandoned Industrial Board, which were rejected on the ground that they showed no indication of competition.

The present order, according to an announcement made by Acting Secretary of the Navy Roosevelt, was placed "at a tentative price subject to later adjustment," and that only one company bid on the entire order. Whether the steel company will get a higher price than that fixed by the Industrial Board, or whether, on account of the fact that it is put through as a war emergency requisition the price paid will be lower, remains to be seen. The price tendency so far seems to be upward.

The freeing of the price situation from Governmental muddling by the dissolution of the Industrial Board and the resultant "open" market for building materials has already brought about an unmistakably better feeling in the construction industry.

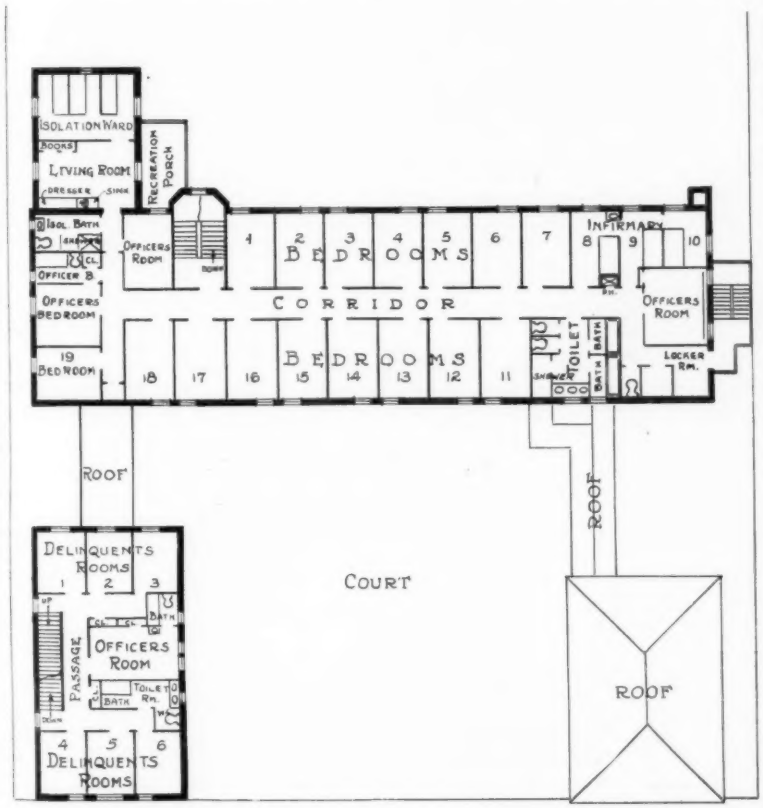
Training School and Home for Young Girls, Brooklyn, N. Y.

LUDLOW & PEABODY, *Architects*

(For interior views and floor plans, see plate section)

THE probem of what to do with young girls who have come into the courts for petty crimes and immoral conduct is a difficult one. In order to meet this to some extent the Brooklyn Training School and Home for Young Girls was established to take care of such cases, so that instead of the old-time method of sending these girls to the workhouse or jail they can be cared for in a manner that looks to constructive redemption rather than a period of incarceration which often confirms the culprit in her evil tendencies. Therefore, it is the practice now for certain of the judges of Brooklyn to send to the Brooklyn Training School such cases of this kind as come before their courts.

The Brooklyn Training School, as the secondary title indicates, has for its keynote the feeling of "home." These young girls, from the age of 12 to 18, are taken care of and educated by women of fine character and ability, and the strict discipline to be administered is not that of the jail.



The problem of the housing of such girls, therefore, is to provide practically a prison that is, in aspect and administration, a home. Iron bars and show of locks are, therefore, tabooed. Freedom from institutional lines and the use of color are essential.

The group consists of three buildings, two of which have already been constructed, and are shown by the accompanying photographs. One of these is a school building, which provides two large class rooms and an instructional laundry, the latter being used by the girls to do the work of the institution. The other building now constructed houses the head matron, a number of girls in small private rooms, and a little suite of dining room, living room, bedroom and bathroom, which is a typical apartment such as the girls may be called upon to take care of in their home life. Two or three at a time live in this apartment for a short period and are instructed in its care.

The large building which is to be erected later, to take the place of an old wooden structure which is now being used in its stead, will accommodate about fifty girls in private rooms, sleeping porch, detention ward, etc. It also houses the general dining room, recreation room, play room, solarium, and officers' room.

It is customary, on receiving new inmates, to

place them for two or three weeks in an entirely separate suite, called the "detention ward," where they are under surveillance during examination and a period of probation. In a little tower room in the fourth story, reached by a winding stairs, is a solitary room called the "thinking room," and is to this institution what the dungeon is to Sing Sing Prison; the difference is that this room is anything but a dungeon, the theory being that a flood of sunshine is better than darkness for the correction process.

These three buildings are connected by covered arcades so that access from one to the other is made convenient. They have red tile Spanish roofs and light buff pink stucco walls, with faded green windows and doors.

The court formed by the three buildings will be treated in simple garden fashion, so that the Italian effect of the whole group may be maintained.

To prevent the escape of the inmates, continual care is required, which is made easier by the ornamental grilles in the windows, which prevents a clear opening above or below either sash of more than 9 in. In addition to this, the annunciator in the officer's room on each floor connects with the door of each bedroom.

Construction Field In South America

The requirements for construction materials in Chile, Peru and Equador are set forth in detail in a book of 200 pages just published by the Bureau of Foreign and Domestic Commerce, Department of Commerce. It appears that there is much construction and building work going on in Chile, where the Public Works Department has considerable work in hand. During 1917, thirty-five projects with a cost of over a million dollars were finished.

The author of the reports states that American manufactures are generally as good as those of Europe, and in some cases better. Some of the articles of American make that enjoy a preference in Chile are door locks, padlocks, hinges, iron and wire nails, tacks, lumber for construction and cabinet work, turpentine, varnishes, enamels and many other articles that are not imported in large quantities. The Chilean public is generally favorably impressed with American goods and considers them more up to date than the European articles.

During the past decade sanitation in Chile has made great progress. It is estimated that 15,000 fixtures, including enameled and porcelain bathtubs, water closets and lavatories are imported annually. There is also a steady demand for heating installations, hot water being the system most favored.

The time is ripe in Peru for the sale of construction materials, and there are possibilities of making some good contracts. The country has entered upon a period of prosperity. The government is progressive. The war has enriched the Peruvians who, a little uncertain how to invest their gains, are in many instances buying up lands and old houses and are preparing to rebuild with modern structures possessing all sanitary conveniences.

The financial condition of the Peruvian Government has been greatly improved, the income having increased more than 30 per cent, the result being that work has been commenced on several new public buildings, and will soon follow on others.

Impetus is being added to this activity by the fact that on July 28, 1921, the centennial of the independence of Peru will be celebrated, and it is proposed to have finished by that time the Judicial Palace, the Legislative Palace, the Archbishop's Palace, the model jail, the Prefecture, an orphan asylum and a hospital for women.

Some of the products that may be readily sold in Peru are yellow pine and Douglas fir, which will find a market in Peru so long as the native forests of the country remain undeveloped. The United States furnished the largest share of structural steel and Portland cement. In 1916 we furnished 89 per cent of the weight and 90 per cent of the value of window glass. England and Germany have led in supplying paints and paint materials. Paint materials coming from the United States have generally been higher in price than those from abroad.

Demand For American Building Specialties

It is learned from a letter received by a prominent manufacturer in this country, from the American Commercial Attaché at Copenhagen, Denmark, that in the opinion of Professor Kampmann, a leading architect, there is a very large demand in Denmark for a number of modern American specialties.

Professor Kampmann is further of the opinion that it would be to the interest of American manufacturers to popularize their product in Denmark and has asked that samples, specifications and catalogs be forwarded to him. Professor Kampmann's address is Harsdorffsvej 3, Copenhagen, Denmark. For a wider distribution of commercial literature or advertising material it is suggested that the three most important architectural organizations in Copenhagen be addressed. These are: Akademisk Arkitektforening, Stormgade 12; Dansk Arkitektforening, Gyldenevesgade 3; Fri Arkitektforening, Strandgrade 26; Copenhagen.

Beaux-Arts Institute of Design

DIRECTOR OF THE INSTITUTE, LLOYD WARREN

ARCHITECTURE, WILLIAM F. LAMB — SCULPTURE, JOHN GREGORY

INTERIOR DECORATION AND INDUSTRIAL ART DESIGN, ERNEST F. TYLER

MURAL PAINTING, ARTHUR CRISP

Official Notification of Awards—Judgment of March 4, 1919

THE PUPIN PRIZE

The Gift of Prof. M. I. Pupin of Columbia University

Offered for the Ornamental Treatment of Some Scientific Appliance

FIRST PRIZE—$50. SECOND PRIZE—$25.

For conditions governing this Prize Competition, see Circular of Information, Article VIII—1 and 3.

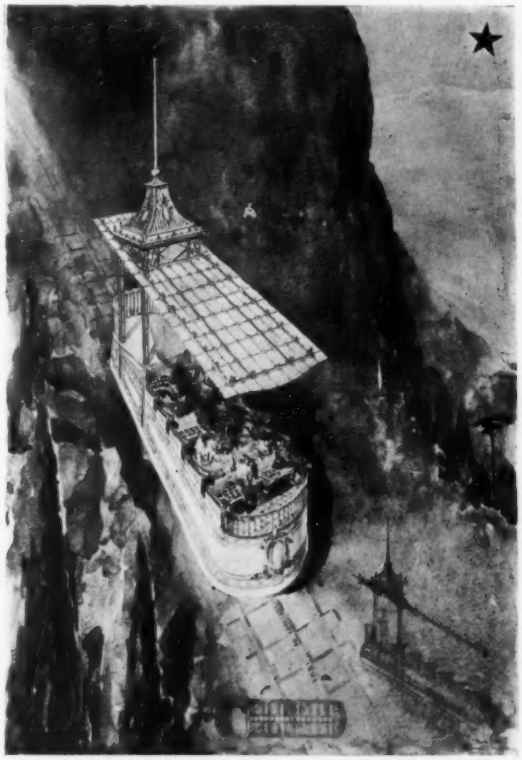
PLACED FIRST, D. M. ALLISON, UNIV. OF ILLINOIS.
PUPIN PRIZE
A CAR FOR A FUNICULAR RAILWAY

PROGRAM

The Committee on Architecture proposes as subject of this Competition:

"A CAR FOR A FUNICULAR RAILROAD"

A funicular railroad is supposed to make an ascent 3000 feet, at an average grade of 30 degrees from the horizontal, to the top of a mountain. On account of the length of time necessary for the trip, and the views along the route, the car shall



PLACED SECOND, A. C. RUNZLER, UNIV. OF PENNA.
PUPIN PRIZE
A CAR FOR A FUNICULAR RAILWAY

be so designed as to be especially suitable for observation, but shall be comfortable, while providing place for as many people as possible. The arrangement shall be such that the platforms and seats will be level. The car shall be simple in design, but shall not lack a decorative appearance. In other respects the design is optional.

The car shall not exceed 20 feet in length by 6 feet in width, and shall be provided with a roof as a protection against the sun and rain.

JURY OF AWARD: F. A. Godley, T. Hastings, J. O. Post, F. H. Bosworth, Jr., R. H. Dana, Jr., R. M. Hood, W. S. Wagner, M. J. Schiavoni and L. Ayers.

Number of drawings submitted—33.

AWARDS:

Placed First (Not qualified for Prize)—D. M. Allison, Univ. of Illinois, Urbana.

Placed Second—$25—A. C. Runzler, Univ. of Pennsylvania, Phila.

Placed Third—E. Hayward, "T" Square Club, Phila.

Placed Fourth—S. M. Jokel, J. Huntington, Poly. Inst., Cleveland.

Placed Fifth—J. K. Smith, Univ. of Pennsylvania, Phila.

Official Notification of Awards—Judgment of April 15, 1919

Second Preliminary Competition for the Twelfth Paris Prize of the Society of Beaux-Arts Architects

For illustrative prize winning designs, see plate form.

PROGRAM

The Committee on Architecture proposes as subject of this Competition:

"A TERMINAL RAILROAD STATION"

The station that is the subject of this problem, is supposed to be the terminal of one of our principal railroad lines in a large city. A level site, 600 feet square, bounded on one side by a broad avenue, on the two adjacent sides by important streets, and on the remaining side by the railroad yard, is to be devoted to this purpose. The tracks, of which there are thirty, are approximately on the same level as the streets. The platforms for the arrival and departure of trains may be beyond the limits of the site described above, or included in it, at the student's option. There shall be ample provision on the site itself, however, either in the form of courts, or as may be otherwise arranged, for the arrival and departure of municipal street car lines, omnibus lines, and cabs.

The principal requirements of the station itself may be arranged in a single structure, or in several, as desired, and shall be as follows:

Concourses, ticket booths, baggage facilities (incoming and outgoing), parcel rooms, transfer companies, men's and women's waiting rooms with accessories, telegraph, telephones, a post office subtation, information bureaus, lunch rooms and restaurants, newspaper and cigar stands, and the railroad executive offices.

All the above requirements should preferably be on one main level save the railroad executive ofces, which may be on upper floors and need not be shown, although access to them must be indicated. If, however, any of the main requirements should be placed on different levels, their locations and dispositions shall be plainly indicated on the drawings called for.

JURY OF AWARD: R. H. Dana, Jr., W. Emerson, J. O. Post, R. M. Hood, L. F. Peck, H. Hornbostel, F. H. Bosworth, Jr., and L. Ayers.

Number of drawings submitted—15.

AWARDS:

Placed First and 2nd Medal—L. Fentnor, Atelier Wynkoop, N. Y. C.

Placed Second and 2nd Medal—F. M. Hodgdon, Atelier Rebori, Chicago.

Placed Third and 2nd Medal—E. E. Weihe, Atelier A. Brown, Jr., S. F. A. C., San Francisco.

Placed Fourth and 2nd Medal—D. McLachlan, Jr., Harvard Univ., Cambridge.

Placed Fifth and 2nd Medal—A. C. Bieber, Univ. of Pennsylvania, Phila.

Placed Sixth (1st Alternate) and 3rd Medal—R. H. Segal, Patrons G. & E. Blum, N. Y. C.

Placed Seventh (2nd Alternate) and 3rd Medal—W. F. McCaughey, Univ. of Illinois, Urbana.

MENTION:—R. W. Cheesman, Cor. H. I. Schenck, Dayton; W. H. Livingston and G. A. Anderson, Univ. of Pennsylvania, Phila.

PLATE 171

TRAINING SCHOOL AND HOME FOR YOUNG GIRLS, BROOKLYN, N. Y.

LUDLOW & PEABODY, *ARCHITECTS*

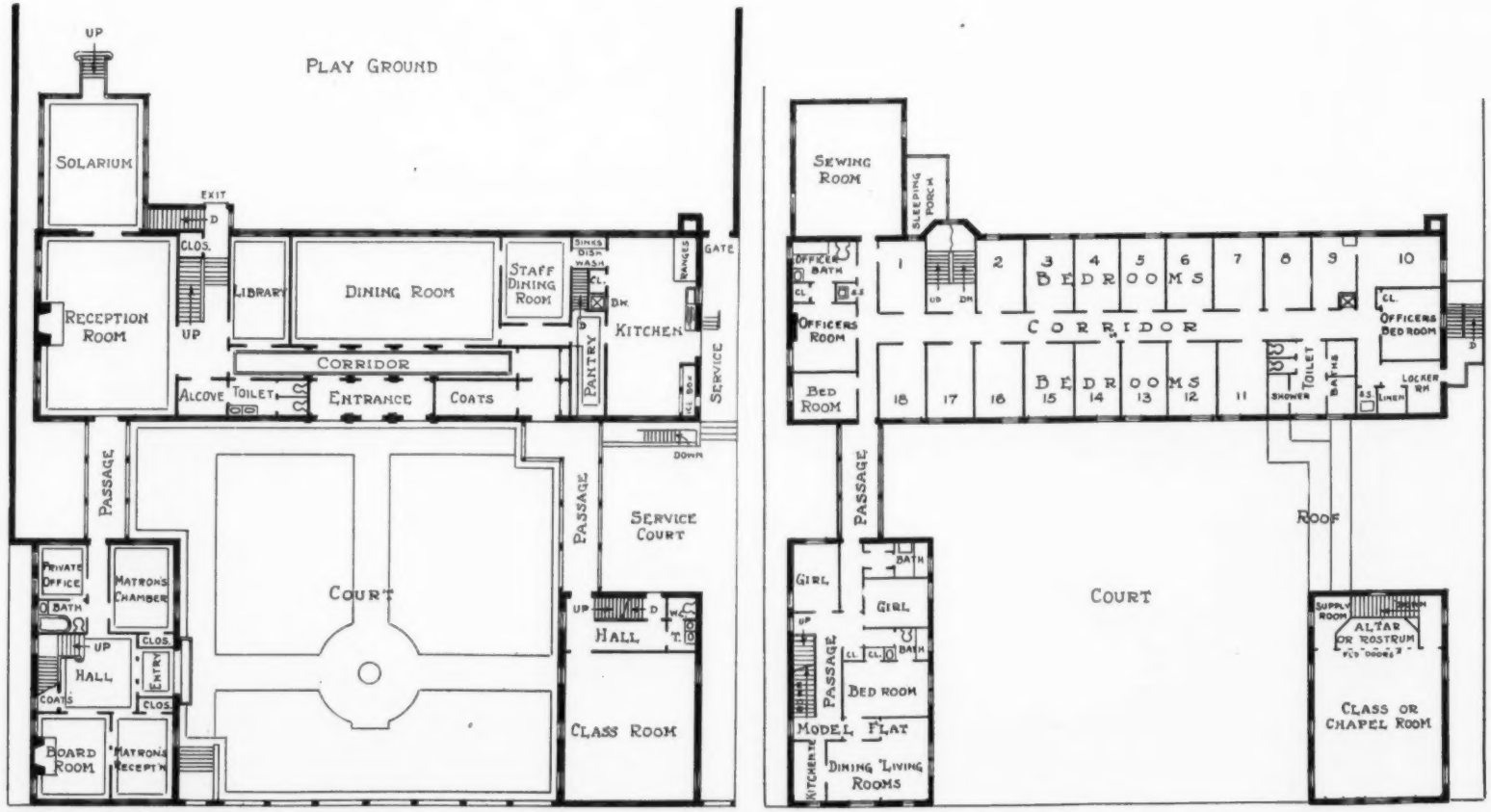


PLATE 172

TRAINING SCHOOL AND HOME FOR YOUNG GIRLS, BROOKLYN, N. Y.

LUDLOW & PEABODY, *ARCHITECTS*

PLATE 173

TRAINING SCHOOL AND HOME FOR YOUNG GIRLS, BROOKLYN, N. Y.

LUDLOW & PEABODY, *ARCHITECTS*

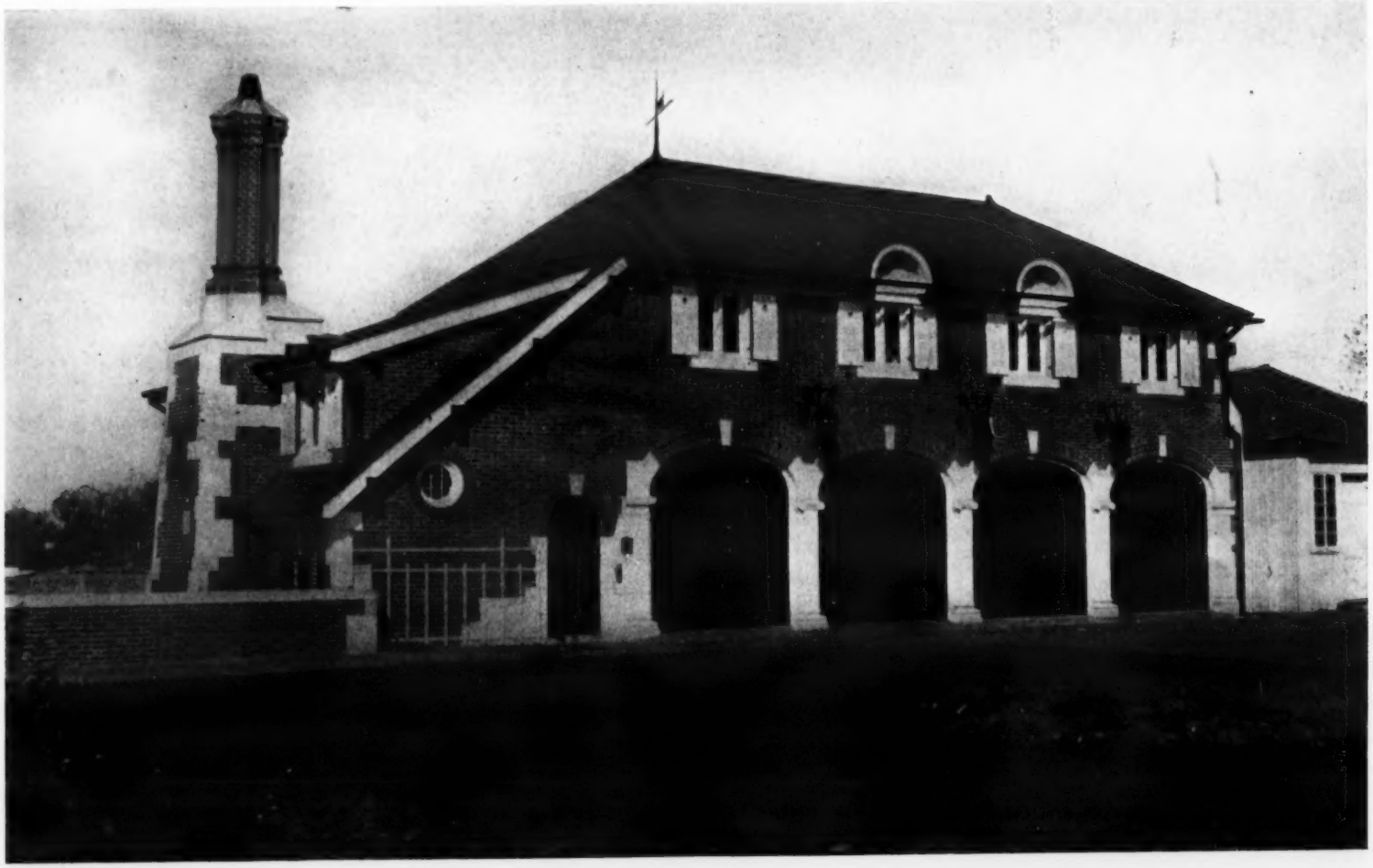
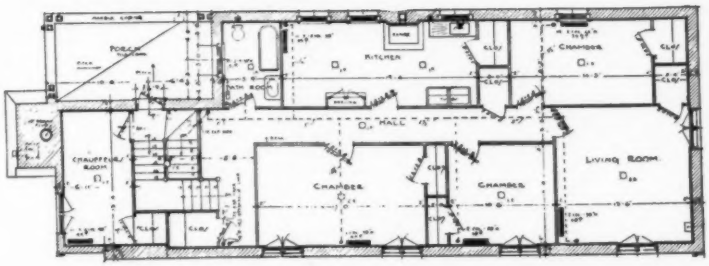
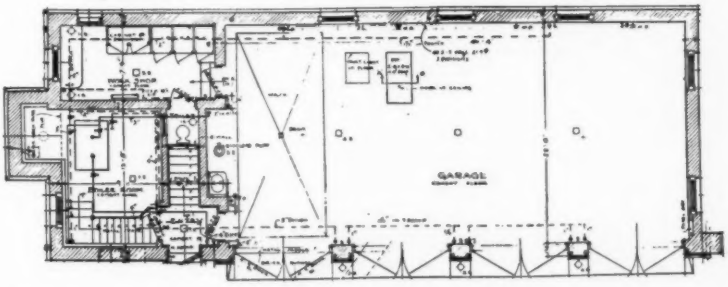


PLATE 174

GARAGE FOR EDWARD C. SCHAEFER, PREMIUM POINT, N. Y.

REILEY & STEINBACK, *ARCHITECTS*



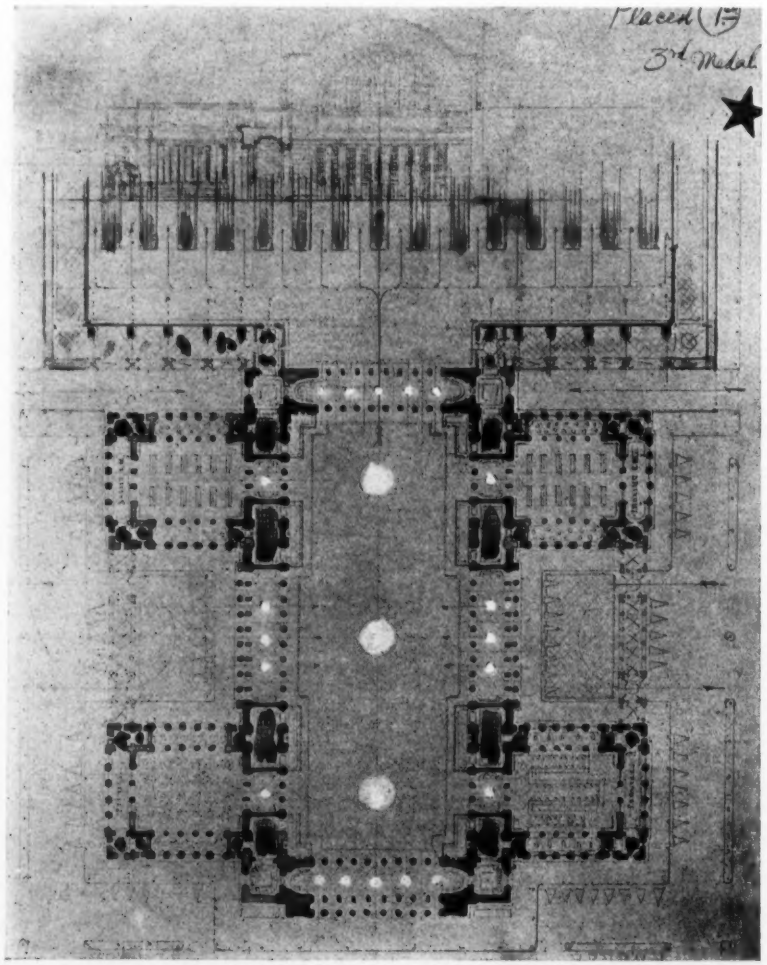


DETAILS AND PLANS

GARAGE FOR
EDWARD C. SCHAEFER
PREMIUM POINT, N. Y.

REILEY & STEINBACK,
ARCHITECTS

PLATE 175



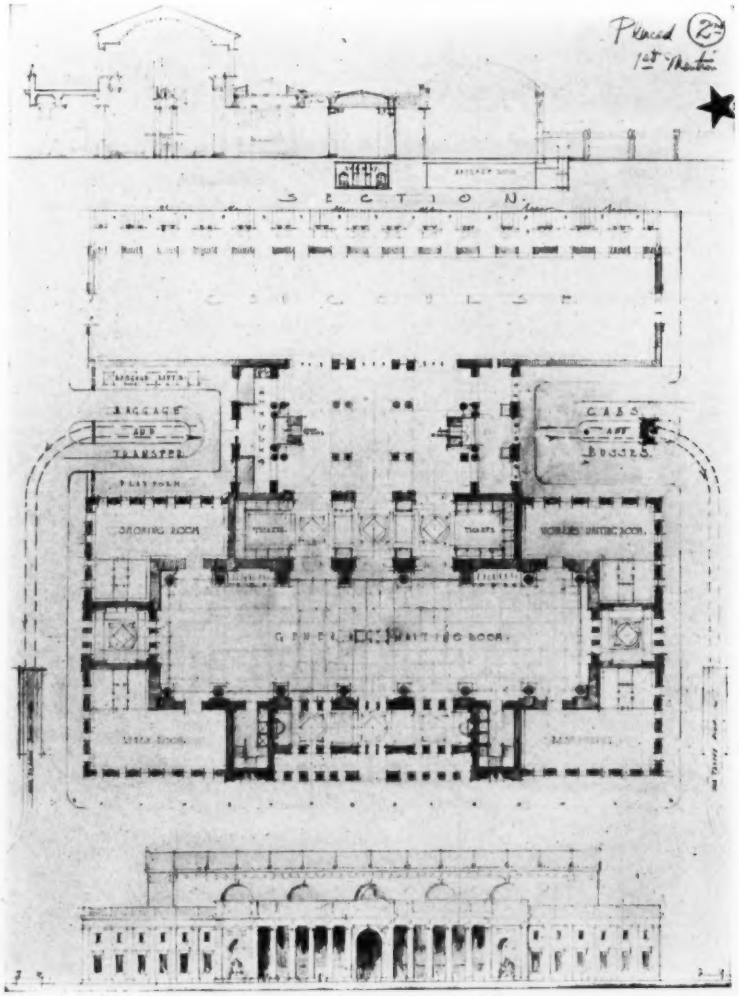


PLATE 176

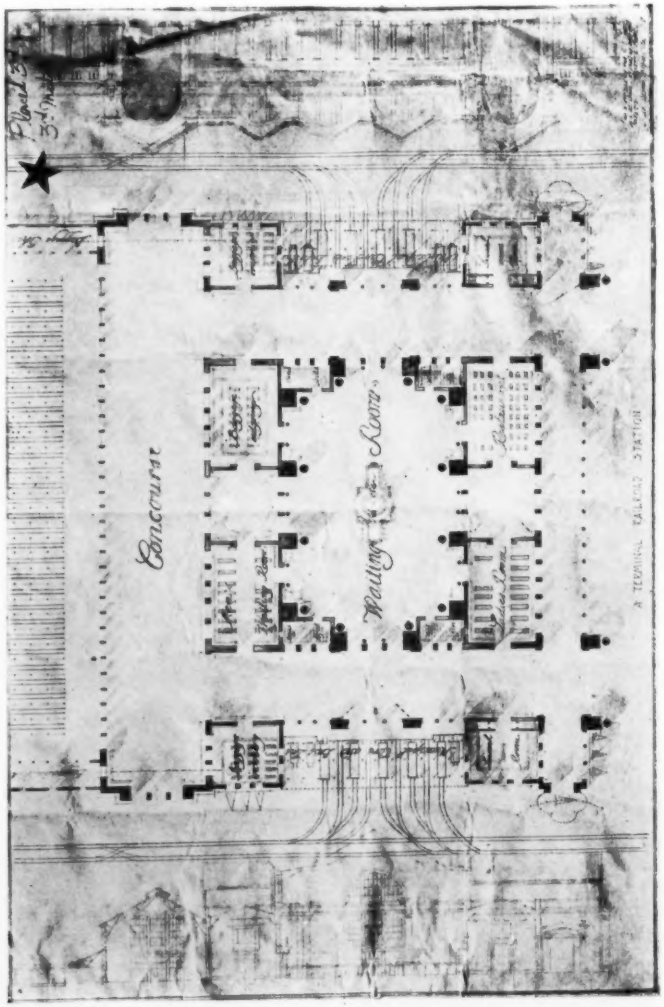
PLACED FIRST, SECOND MEDAL—L. FENTON, ATELIER WYNKOOP

PLACED SECOND, SECOND MEDAL—F. M. HODGDON—ATELIER REBORI

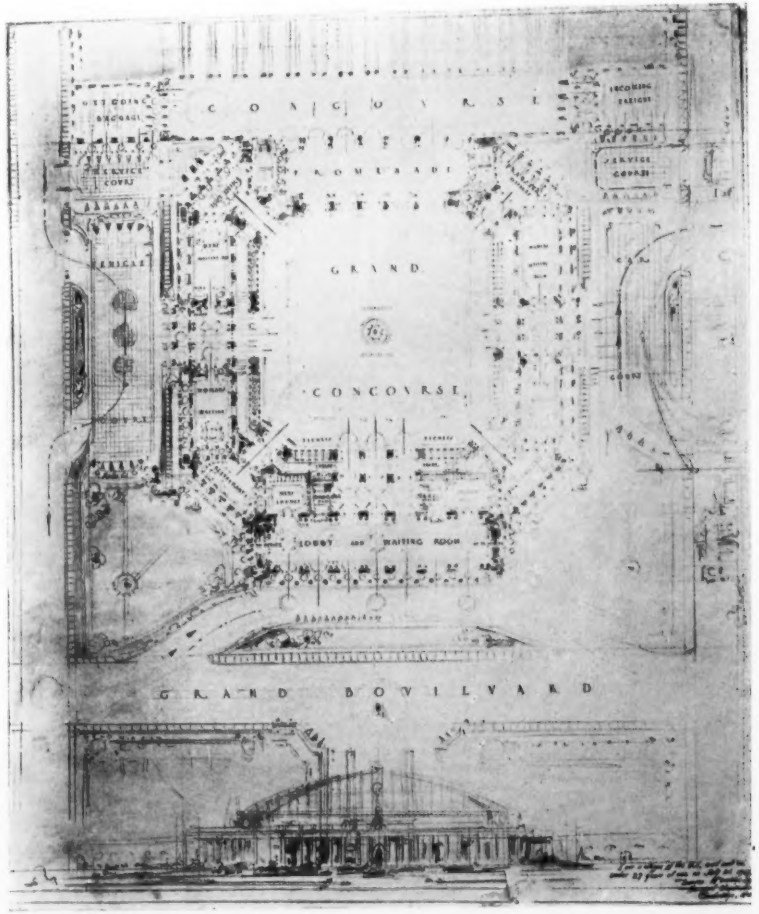
A TERMINAL RAILROAD STATION

SECOND PRELIMINARY COMPETITION FOR THE TWELFTH PARIS PRIZE

STUDENT WORK—BEAUX ARTS INSTITUTE OF DESIGN



PLACED THIRD, SECOND MEDAL
E. E. WIEHE, ATELIER A. BROWN, JR., S.F.A.C.



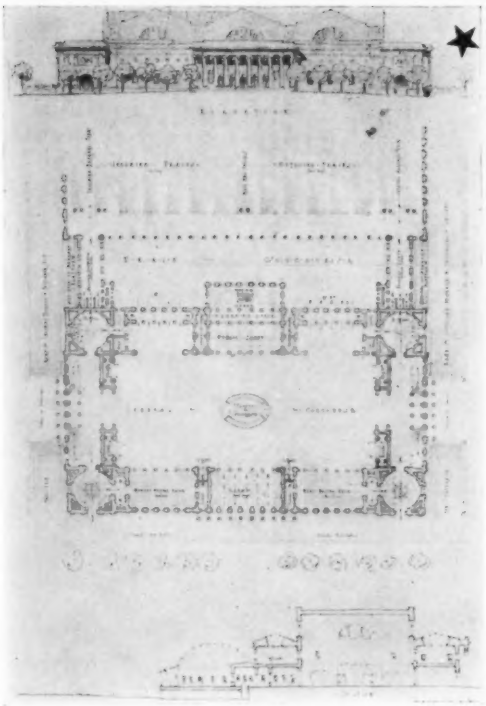
PLACED FOURTH, SECOND MEDAL
D. McLACHLAN, JR., HARVARD UNIVERSITY

PLATE 177

A TERMINAL RAILROAD STATION

SECOND PRELIMINARY COMPETITION FOR THE TWELFTH PARIS PRIZE

STUDENT WORK—BEAUX ARTS INSTITUTE OF DESIGN



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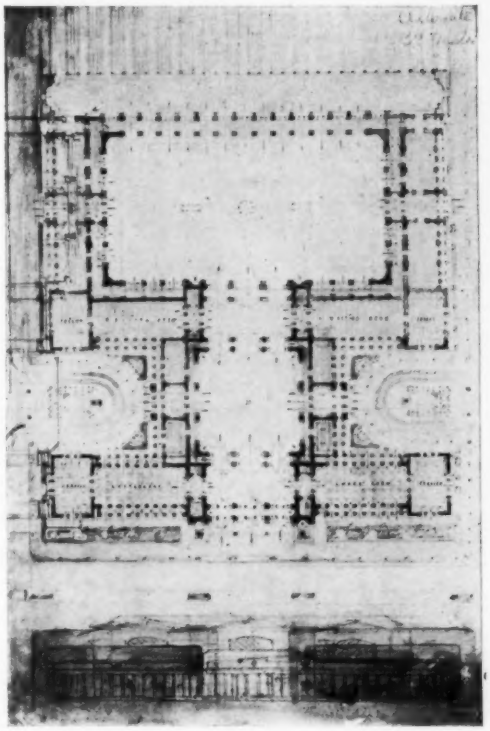
A. C. BIEBER, UNIV. OF PA.



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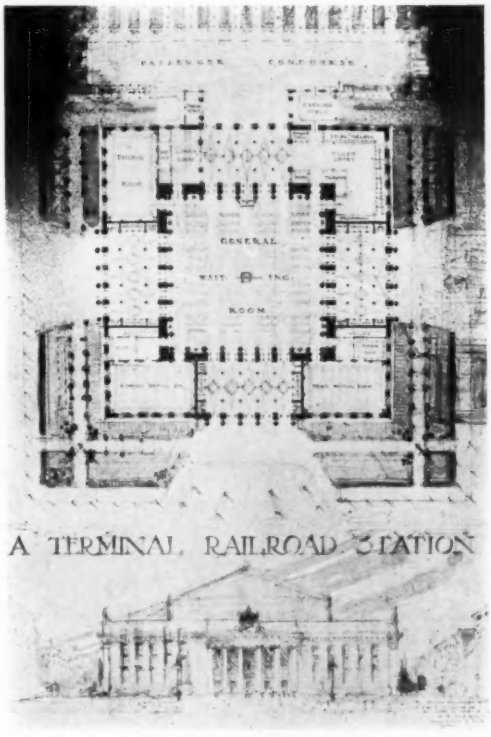
R. H. SEGAL, PATRONS G. & E. BLUM



PLACED SEVENTH
W. F. McCAUGHEY, UNIV. OF ILLINOIS

A TERMINAL RAILWAY STATION

SECOND PRELIMINARY COMPETITION FOR THE TWELFTH PARIS PRIZE

STUDENT WORK
BEAUX ARTS INSTITUTE OF DESIGN

Recent Legal Decisions

Difference in Mechanics' Liens Under Different Statutes

In New York and other jurisdictions which follow what is sometimes called the "New York System," no one except the principal contractor acquires an absolute lien on the real estate upon which the improvement is made, and the rights of the subcontractor, laborer, and material-man are acquired by a kind of equitable subrogation secured by written or record notice to the owner of their unpaid claims, and the lien thus acquired imposes upon the owner the duty of retaining such funds as are in his hands belonging to the contractor at the time of such notice. In such jurisdictions the subcontractor, laborer, and material-man are limited in their recovery to the amount due from the owner to the contractor.

Other jurisdictions, however, like Indiana, have adopted what is known as the "Pennsylvania System," where the statute gives to the subcontractor, laborer and material-man an absolute lien for the material or labor furnished, in accordance with the provisions of the act and asserted and created in the manner provided therein, and a lien so acquired is not affected by the mere failure of the principal contractor to perform his contract or by the cancellation or rescission thereof, or by the removal of the work or payment of the principal contractor. But where, in a mechanics' lien suit, it is alleged by the defendant that the subcontractor was a partner of the principal contractor and had guaranteed that the improvement constructed would do the work required, it is a defense that the material furnished by the plaintiff had been removed as not complying with the guaranty.—*Coonse & Caylor Ice Co. v. Howe Stove Co.* (*Ind.*), 121 *N. E.* 293.

General Contractor's Right of Supervision

It is settled law that the general contractor has the right of general supervision in so far as it is necessary to insure full and proper performance by the subcontractors, and that it is only when he goes beyond the limits of that right and commits some affirmative act of negligence, as by taking some part in the performance of the work other than such general supervision as is necessary to insure its performance that he is chargeable. It may be difficult to say just what intrusion or participation in the work by a general contractor is enough to make him liable for its negligent performance, and it would be unwise to attempt to lay down any precise rules upon the subject; but it is safe to say that the general contractor is not expected to be a mere interested onlooker, without the ability to complain and criticize, and thus indirectly to suggest; for if that were to be the measure of it, the so-called right of supervision would be a vain and empty thing. The New York Appellate Division holds that the fact that a general contractor took upon himself to have men bail water out of an excavation did not show such control of the construction of a building as to render him liable for negligence of the servants of a subcontractor working on stories above, resulting in injury to the roof of an adjoining building.—*Jacoby v. Browning*, 173 *N. Y. Supp.* 7.

Construction of Contract for Architect's Services

In an action for a fee for designing and supervising the partial construction of a house on the defendant's land, two causes of action were set forth, one on written contract and the other on quantum meruit. Under the contract the architect agreed to render architectural services in connection with the building for a specified commission, and to arrange with the contractor to carry the work of construction forward to the point of completing the wooden frame and covering it with the rough boarding and outside trimmings before demanding any payment on account of his (the contractor's) contract. The architect further agreed to make no demand for payment on account of his own services until the owner had succeeded in negotiating a loan. The architect thereafter arranged with a contractor as agreed, furnished the necessary sketches, detail drawings, plans, etc., necessary for the construction of the house, and the owner then abandoned the work. The trial court found that the owner was liable for the architect's fee under a written contract; that the full fee would have been $3,028, and that he had earned three-fifths of such sum, payable in case of abandonment, or $1,816.80. This was affirmed on appeal, the California Supreme Court holding that the owner could not defeat recovery by abandoning the contract for failing to obtain a loan, for if the owner did not negotiate a loan the indebtedness became payable within a reasonable time.—*Rosenheim v. Howze* (*Cal.*), 176 *Pac.* 456.

LOOKING NORTH ON PARK AVENUE

The Park Avenue Improvement in New York

AFTER fifty years of patchwork improvement, including the opening, closing and relocation of various streets, the avenue which is known as Fourth Avenue below Thirty-fourth Street and Park Avenue above, in New York City, has been completed as an uninterruped thoroughfare at a direct cost of $1,220,000 to the city, $1,131,150 to the New York Central Railroad Company, and $150,000 to the New York Railways system.

The steel viaduct at Pershing Square, extending from Fortieth to Forty-second Street, is in some respects the most noteworthy portion of the improvement. It involved the setting up of six steel girders, each weighing from sixty to seventy-five tons, which act as the main supports of a high-level roadway beginning from the center of Park Avenue at Fortieth Street and terminating at the hitherto unused thoroughfare surrounding the Grand Central Terminal Building.

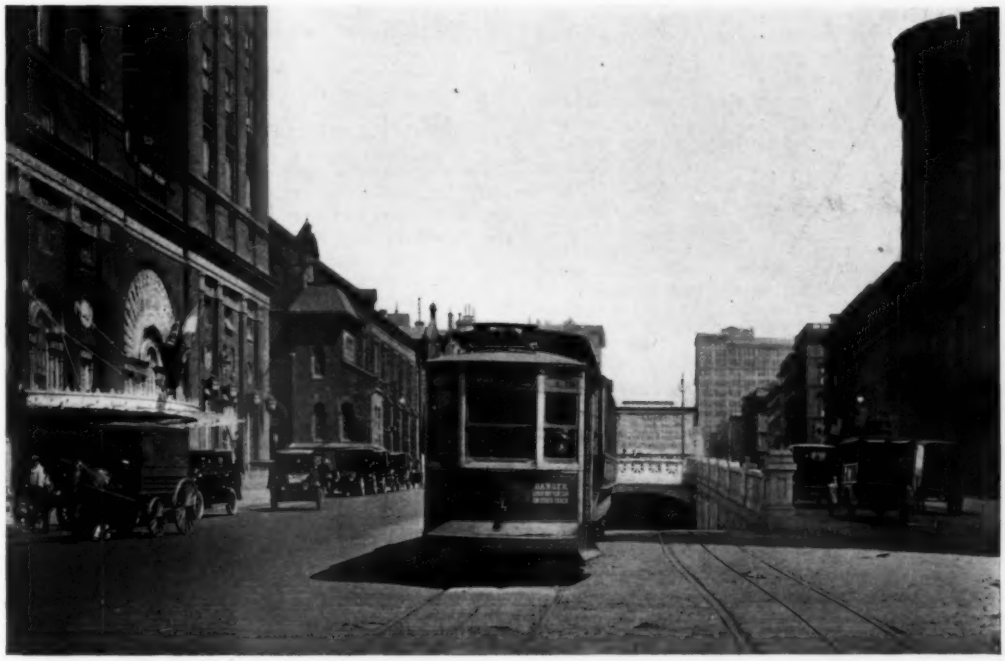
The width of this roadway, which is to be used entirely for passenger vehicles, is 36 feet. It connects at Fortieth Street with two vehicle levels 35 feet in width that are separated by a parked space in the center of the avenue immediately over the surface car tunnel. The width of the elevated stretch on the south side of the Grand Central Terminal Building is 45 feet.

This leads to a high-level street on the west side of the Terminal Building that is 35 feet in width and is really an upper story of Vanderbilt Avenue. On the east side of the Terminal there is also a high-level section varying from 40 to 60 feet in width, but for the present the public is excluded from this thoroughfare because it is legally a private right of way as a result of negotiations between the city and New York Central officials following a special act of legislature, passed in 1903, which provided for the closing of some streets in the terminal zone, and the relocation of others.

LOOKING NORTH ON PARK AVENUE FROM FORTIETH STREET

The other feature of the new thoroughfare is a ramp at Thirty-fourth Street, doing away with the stone wall and the long flight of stairs at this point. Before the construction of the ramp from Thirty-second Street to Thirty-fourth Street, pedestrians were forced to climb a long flight of stairs to get from the Thirty-fourth Street store district and the cross town car lines. In place of the wall there is now a vehicular roadway 25 feet in width and a sidewalk for pedestrians 15 feet wide that connects lower Fourth Avenue, with the continuation of the street above, and with Thirty-fourth Street, and the connection is made at the grade.

The ramp has a grade of 3.6 per cent and inci-



LOOKING NORTH ON PARK AVENUE FROM THIRTY-THIRD STREET

dentally provides for opening Thirty-third Street at grade as a through thoroughfare by the elimination of the barrier that has existed for fifty years in the shape of a retaining wall that marked the beginning of the former tunnel at this point. To bring about the opening of Thirty-third Street across Fourth Avenue it was necessary to raise the grade of both the avenue and the street at that point about 6½ feet. This has resulted in increasing the grade of the tunnel cut for Fourth Avenue surface cars at the point between Thirty-third and Thirty-fourth Streets to about 7 per cent. In the reconstruction work the west section of Fourth Avenue has been widened 3 feet, making the vehicle surface width for southbound 34 feet, so that where in the past there has been but 31 feet for vehicles moving in both directions, there is now a clear width of 24 feet for northbound vehicles and 34 feet for southbound traffic.

The new thoroughfare, it is estimated, will lessen traffic congestion 50 per cent on both Fifth Avenue and Madison Avenue.

Current News

Farms and Soldiers Again

In conference the other day with Secretary Lane of the Interior, both the republican and democratic leaders agreed to support a bill to provide land settlements for soldiers and sailors who served in the war. There is everything to commend this. So much is to be said in favor of helping the veterans to jobs, land and a home, that the question resolves itself into only how best this may be accomplished.

The whole country would reap the benefits from a plan which would make two blades of grass grow where but one grew before. The New York *Times* summarizes this by saying that there are millions of acres of arid land which can and should be irrigated for production, other millions of acres of swamp land that should be reclaimed for the same purpose, and still other millions of acres of cut-off land that should be cleared and plowed for sowing. Some of the land, if Secretary Lane is heeded, could be used for stock-raising. His plan is to put soldiers and sailors to work at current wages on a great reclamation scheme, and afterward sell them farms and implements to be paid for in installments.

In his last annual report, Secretary Lane, referring to this subject, pointed out that farms for returning veterans would solve many present difficulties.

During the period of reclamation the soldiers would have a job; the industrial labor market would be protected from oversupply; a large part of the best citizenship of the country would become attached to the soil; and great areas of land of no present value would be made productive for the benefit of all the people.

"Would it be unreasonable," said Secretary Lane, "to ask that we spend in the next two years on these veterans of the great war as much as it cost us to conduct that war for a single week? There is only one answer, and all will agree that there can be no surer insurance for the nation than to put its men upon the soil."

Community settlements on the order of farm villages are a feature of the Secretary's plan, for he realizes that without a social element to relieve the monotony of existence on the lands redeemed from wildernesses his plan would not be practicable. He has no intention of risking failure; therefore he would keep the soldier and sailor on the land in touch with society and its educational and recreational opportunities. "Canada," he says, "with less than 7,000,000 people is offering to each man 130 acres of land and $2,500 with which to improve it. Surely the United States, which has escaped with so slight a comparative loss in life, would do no less."

At the meeting referred to, Representative Mondell, Republican floor leader, announced that he would soon introduce a bill appropriating $500,000,000 to provide farms for soldiers and sailors, to be paid for by them in a period of years. Senator Smoot is to look after the bill in the Senate. As a beginning this will be promising, but it is of the first importance that the measure should become a law without the usual delays that attend social and economic legislation.

Returning soldiers and sailors cannot live long on prospects. Active interest must be shown in the plan proposed for their welfare, or it can get no further than the stage of discussion. If this happens, an opportunity valuable all around, will have been lost.

Works of Art Lost to Russia

From Stockholm comes the news that seven hundred and fifty million dollars worth of Russian art treasures are in danger, and that if the Allies or Providence do not intervene, they will eventually be lost. The estimate of their value comes from Prince D. Golitzyne, an expert, who counts merely the contents of the Petrograd Hermitage and Museum of Alexander III; and of the Moscow Tretiakoff Gallery and the Historical and Rumantsieff Museums. Golitzyne takes no account of the uncounted millions worth of pictures, statues and books in the palaces of the Grand Dukes, and the great private families, the Yousoupoffs, Scheremetieffs and Stroganoffs.

An official "robbery museum," it is stated, has been created by the Bolshevists in Petrograd, for loot.

The danger, he says, is not in Bolshevism itself. The responsible Bolsheviks though they rob art wholesale, destroy it only when it glorifies the Romanoffs or monarchism. The danger comes partly from the hungry mobs and the disorderly Red Guards; but most of all from the growing faction of anarchists, who have written on their banner that art is a luxury of capitalists; and that the best way to prevent capitalism reappearing is to destroy all the pictures, statues and imposing buildings, and to burn all libraries to the ground.

Japanese Architecture

Writing in the *Asia Magazine*, a recent visitor to Tokyo asks the following questions:

Why have the Japanese abandoned their splendid heritage of eastern art? Why are they imitating the West? These are the first questions which spring to the lips of every sensitive European or American who comes to Tokyo. The call of the East has lured them a thousand leagues—to what? To the capital of the Tycoon? To the old Yedo of the color prints? To the diaphanous colors of Hearn's lovely pages? No!—to one of the ugliest cities of mixed architecture in the world. Old Japan lingers in by-streets, in temples, in tea rooms and gardens and in conservative art, but nowhere with evolving energy, as one is forced to admit, when chance throws old and new together for our comparison. To the traveler newcomer the contrast does not strike home, because there is enough of old tradition to satisfy his exotic needs. It is only when second-hand Europe in Asia begins to obtrude itself upon his attention that his indignation is aroused, and his resentment leads him to ask the answers to these questions.

Looking for oriental beauty, he finds all the ugly occidental trade-marks of materialism, and he turns and rends them because they are not up to date. The necessity for modern efficiency he reluctantly admits; but, being no psychologist, he cannot grasp the magnitude of this demand for the old exquisiteness of the extreme oriental people, whose whole energy has been spent during a short half-century in absorbing, at breakneck speed, western industrialism and material efficiency, in order to preserve independence. The west has taken at least four times as long in her own indigenous process and has effectively antagonized her art and action. It may well be that the traveler's protest is a cry of sympathetic pain and warning.

"But," exclaims the visitor, "what has art to do with industrialism?" Everything. In applied art directly and in pure fields indirectly. The Japanese are abandoning their old traditions of art because they are abandoning their old traditions of life. The two are inseparable; life feeds art, and art stimulates life. As well might one expect a cabbage to yield roses as to demand the old medieval flowers of Japanese art on the pavements of Tokyo.

Rheims Cathedral, Past and Present

That Rheims Cathedral is more associated with the history, the patriotism and the art of France to a greater degree than perhaps any other similar structure may be gathered from the following account in the English architectural press.

Rheims Cathedral was built on the spot which tradition assigned to the baptism of Clovis—an event which gave to the Kings of France their titles of Roi Tres Chrétien and Premier Fils de l'Eglise. It early became the coronation church of the Capetian dynasty, and to it Charles VI was brought by Joan of Arc to receive his crown and to save his country. It was considered to be one of the most noble and most beautiful examples of medieval architecture in Europe.

Conflicting reports as to just what has happened to this noteworthy example of Gothic building, make an authoritative account of interest.

The western façade and portal are severely battered, the greater number of the pinnacles of the southern front have been shot away, the roof has several gaping holes in it, the high altar is a formless mass of débris, and the choir as such has ceased to exist. The glass has entirely disappeared—some, indeed, has been preserved, but most has been totally destroyed. All that really remains is the core of the fabric—probably considerably shaken and weakened—and the remarkable series of statues within the west wall. Nothing in the way of restoration has yet been begun, and the public are shown the church by a guardian who tells them that it will take a generation to repair it.

Pawtucket's Civic Theater

The disappearing saloon is creating problems which have been absorbing attention throughout this rapidly drying country. While the interesting work of the Pawtucket Civic Theater had its inception in an entirely different need, it might if adapted in other cities, also serve as an alternative for the saloon, particularly in cities where a large percentage of the residents are foreign born.

The Civic Theater movement in Pawtucket is an enterprise founded for the sole purpose of teaching Americanism to the foreigners in our midst. The common sense methods pursued, the sympathetic attitude of those who are conducting it toward those of foreign birth, commend it to the serious consideration of all who would have the melting pot melt a trifle more thoroughly than it has in the past.

Survey Shows How Available Space Has Been Absorbed

The survey of housing conditions in thirty-four typical city blocks, which has been carried on by the New York State Reconstruction Commission with outside aid, reveals a percentage of vacancies which has continued to decrease since 1916. The vacancies now are at their lowest point and are found practically only in houses which are completely uninhabitable from the point of view of human things.

"At present there is a total of about 985,000 apartments in Greater New York," said the Tenement House Commissioner, Frank Mann. "There are altogether approximately 103,000 apartment houses including old law and new law tenements. These include all apartment houses. The relation between old law tenements and new law tenements is 75,000 old law and 28,000 new law, making a total of 103,000 houses.

"From January 1 until April 15, 1919, seventy-six plans were filed for tenement houses with an aggregate number of 120 buildings and 1,658 apartments. There is a shortage in the city today of about 100,000 apartments. The approximate normal increases in population, with immigration eliminated, as it is now, should be about 200,000.

"The vacancies in 1916 in tenement houses, both old law and new law together, was about 6.52 per cent; in 1919 it is 3.25 per cent, of which the vacancies in new law tenements are .6 per cent and in old law tenements 2.18 per cent.

"The vacancies which existed are on the lower east side—the old tenement houses some forty or fifty years old or more. They would house approximately 42,000 people. They are legally fit for human habitation, but that is all. The only remedy to this situation is the erection of new and better houses."

Planning Model Cities

Cities looking for twentieth century results cannot expect to get them from nineteenth century methods. This is the substance of some comment in a daily paper of St. Paul. The writer of this comment calls attention to the situation in England. There, he says, new cities are planned for sites as yet unbroken, to provide localities for industries and homes for industrial workers. The great cities—London, Manchester, Sheffield—are no longer regarded desirable locations for industries. They are incapable of taking care of the pressing demands of housing, transportation and sanitation. They are too inelastic and unadaptable. Property is too expensive and the mistaken conservatism of proprietors is a bar to the improvements necessary for the development of a modern industrial community.

The same tendency may be noted in this country. Gary is the classical example, a city planned complete before a spadeful of earth was turnd on the grounds where it was erected. But apart from paternalistic ventures of this sort, there are cities like Flint, Mich., and Janesville, Wis., both of which have had remarkable growth due to the automobile industries which have developed there, and both of which are laying plans for the maximum of municipal efficiency.

This is the course of procedure the benefits of which require no emphasis of statement.

Paris Architect Estimates Rheims Construction to Cost a Billion Dollars

Architects of Paris, Rheims, and other French cities have been preparing plans for the reconstruction of Rheims, the total cost of which undertaking they have estimated at a billion dollars. Twenty complete plans have been submitted. The city of Rheims will select from each plan the features that seem most desirable, and will arrive at a final plan to be approved by the city council.

Russian Housing Difficulties

In Russia, it is learned, housing accommodations fail to meet one-tenth the demand. Houses are so scarce that it is almost impossible to get a Trans-Siberian Railway passenger car, because they are used in all-important stations to house refugees and as Government offices.

Simplicity of Beauty

Referring to the value of the civic association to every town or city, a writer in the Lansing (Mich.) daily press writes very tersely. A civic association, he says, may urge that industrial buildings can be just as useful if they are beautiful as if they are not, that their employees lose no efficiency because the shop has window boxes filled with green things or has its waste spaces kept in tended lawns.

It costs no more to erect a beautiful building than an ugly one, since beauty is a matter of line and color. Beauty can be produced with pine and carefully selected paint as easily as with marble. The limiting of workshops and railroad yards to certain districts may seem a hardship in some cases, but the result in the appearance of the city, the sustained value of property and the class of persons attracted as residents will soon compensate.

World Chamber of Commerce

The American Chamber of Commerce in London has put forward a plan for a consolidation of the various chambers of commerce throughout the world. Organizations in the United States are actively supporting the idea. The American Chamber of Commerce in London is in touch with Edward Filene of Boston, a director in the Chamber of Commerce of the United States. Mr. Filene is now in Paris, where he is working in the interest of such a procedure.

With such a combination of local and foreign chambers all working under uniform methods, it is believed that business men throughout the world will be provided with an international organization unsurpassed by anything at present available for the development of better business.

Erect Building in 33 Hours

To have erected in 33 hours a building of 15,000 square feet floor space, including a theater, social rooms, two canteens, class rooms, kitchen, offices and five sleeping rooms, the whole being what in army parlance is known as a "hut", is an achievement of which the 101st Engineers of the 26th Division, American Expeditionary Force, may well be proud.

It is known as the "York Harbor Y. D." hut of the Yankee Division opened by the Young Men's Christian Association at Le Mans.

Foundations had to be leveled, French municipal authorities had to be dealt with for the site and for the location, of sewer, water and electrical connections; one car of material carrying the floor joints went astray and other timbers had to be cut at a local mill. Notwithstanding all these difficulties the hut, which is the largest one used by the American Expeditionary Force, was erected, New England stone fireplace and latticed doorways all complete, in a space of time that made the good people of Le Mans rub their eyes in amazement.

Government Offers Business Data to Industry

The Council of National Defense announces its readiness to place at the disposal of business men the large fund of information now available in the quantity of data assembled and classified by its Reconstruction Research Division. This division, it is stated, may be called upon to procure such additional special information as will assist in the reorganization of industry and the resumption of trade, or in any way promote progress in reconstruction.

The division is well equipped for such service. It has access to every important report of foreign reconstruction, whether proposed or actually accomplished, that reaches this country. It also has available, what is thought the most reliable information to be obtained on foreign, commercial, industrial and financial conditions and prospects.

It is learned that this division has contact with all the war administration boards, and investigation commissions, as well with numerous sources of unpublished information,

dealing with price data, production estimates, wage data, labor supply reports, and the reported results of experiments in method of handling labor problems, on foreign production and other conditions abroad, including labor and immigration.

The division maintains its own clipping service, supplemented by commercial clipping bureaus, and has facilities for sifting practically everything in public print that has a bearing on any phase of reconstruction. This material is all classified, indexed, and ready for reference.

The material and staff now placed at the command of business are primarily intended for government use and will, of course, continue to function as the government clearing house of reconstruction information.

San Francisco Struggles with Comfort Station Problem

Plans for the establishment of comfort stations throughout the city, in addition to those to be built by the city, are being discussed by the Board of Supervisors of San Francisco, Cal. A proposition has been advanced to make the permits granted automobile service stations contingent on the establishment and maintenance of such facilities.

The city engineer has recommended an appropriation of $12,000 in the coming budget for the construction of convenience stations, but it is doubtful if work on any of these can be commenced before saloons go out of business, even if the application for funds is granted.

San Francisco is singularly lacking in public convenience stations, the city maintaining but one in the downtown district, outside of those in its City Hall and Hall of Justice. However, it has exceptional opportunities for the installation of stations, since it is the owner of all sidewalk area, an arrangement not true in many large cities.

Property owners have been making use of this free of charge for many years, and it has been suggested that they be called upon to pay a rental for this privilege, or to set aside basement room for comfort stations. Civic organizations are urging that some policy be decided upon at once and work commenced.

Issue Call for Meeting to Form New State Association in New York

A call was issued this week to all qualified architects in New York State to attend a meeting to be held at Utica, N. Y., on June 7th, at which time a new organization, to be known as the New York State Association of Architects, will be formed. As was exclusively announced in the April 30th issue of THE AMERICAN ARCHITECT, all architects of New York State interested in the formation of this organization are requested to correspond with John B. Slee, acting secretary, at 154 Montague Street, Brooklyn. The purpose is to bring together those practising the profession of architecture in order that they may take a more active part in the working out of the important and timely issues that now have to be faced. Others on the committee of arrangements include Frederick L. Ackerman, William P. Bannister, James Riely Gordon, L. E. Jallade, Robert D. Kohn, Frank H. Quinby, Andrew J. Thomas, D. Everett Waid, all of New York City; A. L. Brockway, Syracuse; Edwin S. Gordon, Rochester; F. H. Gouge, Utica; Edward B. Green and H. Osgood Holland, Buffalo; Alexander Mackintosh, Brooklyn; Leon Stern, Rochester; Ornan H. Waltz, Ithaca, and Walter H. Whitlock, Binghamton.

Personal

Architect Anton Dobman has moved his offices to 1003 Pabst Bldg., Milwaukee, Wis.

A. Raymond Ellis, architect, has opened offices at 36 Pearl Street, Hartford, Conn.

H. Childs Hodgens, architect, has opened an office at 1312 Walnut street, Philadelphia.

J. J. Kocher, architect, formerly of 7807 S. Loomis St., has moved to 806 W. 79th St., Chicago, Ill.

Fred A. Evans, architect, announces the removal of his office to 704 Book Building, Detroit, Mich.

R. E. Peden, architect, has opened offices at 945 New York Life Building, Kansas City, Missouri.

Chas. F. Buhrman, architect, R. F. D., Waynesboro, Pa., is about to open an office in Waynesboro for the practice of architecture.

F. W. L. Foehringer, architect, formerly 118 North La Salle street, has moved his office to his residence, 2677 Orchard street, Chicago.

Walter Frieling, architect, formerly in office of Hersch & Hersch, Altoona, Pa., has opened offices in room 20, Hutchinson Bldg., Altoona, Pa.

Albert C. Wirth, architect, has opened offices in the Banner Building at Greensboro, N. C. Mr. Wirth desires manufacturers' samples and catalogs.

Alfred Rapp, architect, has reopened offices at 215 West 26th street, Erie, Pa., to practice architecture and desires catalogues and manufacturers' samples.

Esselstyn, Murphy & Hanford, architects and engineers, have moved their offices from the New Telegraph Building, Detroit, Mich., to 810 Marquette Building.

John Hanifen, architect, of Ottawa, Ill., has opened an office in the Tribune Bldg., La Salle, Ill., with Strawn Aldrich Gay in charge, and desires samples and catalogues.

Ira G. Hedrick and W. W. Huff, consulting engineers, announce their association under the firm name of Hedrick & Huff, with offices at 506 Inter-State Building, Kansas City, Mo.

William Dewsnap, architect, formerly of 203 Broadway, New York, has removed his offices to 334 Fifth Ave., New York City. He would like to receive catalogs of building materials of size suitable for filing cases.

C. Howard Crane, architect, 2323 Dime Bank Building, Detroit, Mich., has opened an office at No. 6 Victoria Building, Windsor, Ont., and is preparing plans for a number of important theaters throughout Canada.

Alling S. De Forest, landscape architect, was the speaker at a recent luncheon of the Rochester, N. Y., Engineering Society. He spoke on the work done by the Government in town planning and in providing homes for workers.

Robert L. Fuller, of the firm of Fuller & Delano Co., architects, 44 Front Street, Worcester, Mass., has returned to the practice of architecture after spending several months as a representative of the United States Housing Corporation.

Mr. Phelps Wyman, landscape architect, 648 McKnight Building, Minneapolis, was elected to the board of trustees of the American Society of Landscape Architects at the recent annual election at New York. Mr. Wyman was, prior to last January, president of the Minneapolis chapter of the society. He has been employed in the town planning division of the United States Housing corporation.

Late News from Architectural Fields

Special Correspondence to THE AMERICAN ARCHITECT

Award of Prizes in Housing Competition

The American Housing Competition organized by the Journal of the American Institute of Architects, and conducted by it in conjunction with the Ladies Home Journal has now reached its conclusion in the award of two second prizes each of five hundred dollars, to Milo C. Hastings and Robert Anderson Pope, both of New York City. In making an award of two second prizes, the jury was governed by the fact that while both theses submitted offer a thorough analysis of the causes and cure for the housing problem that now exists in this conutry, the actual plans accompanying them did not fully provide for the application of the principles set forth in the theses.

The winning solutions will be offered broadcast as contributions which attack the problem fundamentally and relate it to our whole social and industrial organization.

New York Society of Architects

The year book of the New York Society of Architects, revised and brought up to cover 1919, has been issued. This is a book of 200 pages, bound in flexible cloth and containing a vast amount of information that is of value and interest to architects not only in New York State, but generally throughout the country. It contains building codes, rules and regulations for plumbing and ventilating, a full report of the building zone resolution, and a complete list of the names of architects throughout New York State. The price of this work is five dollars and it may be secured by addressing the secretary of the Society in the United Engineering Societies Building, 29 West 39th Street, New York.

Notify Institute of Wage Scale

WASHINGTON, D. C., May 23—The Builders' and Manufacturers' Exchange of Washington has notified the Washington Chapter, American Institute of Architecture, of the adoption of a price and wage scale for construction activities in the District of Columbia. The communication was read and approved at the regular meeting of the chapter Thursday night.

Appleton P. Clark, Jr., represented the Chapter on the central stabilization committee. The majority of the building trades union accepted the wage scale of November, 1918, as the basis for work. Builders have agreed to accept the pre-war percentage of profit until January, 1920.

Architects Ask Government Aid

Fifty architects, formerly officers in the United States Army, have filed applications with the War Department for assistance in securing professional connections. The applications have been turned over to the U. S. Employment Service for placement.

Annual Meeting, New York Society of Architects

The New York Society of Architects held its 13th Annual Convention on May 20th at the United Engineering Societies Building.

James Riely Gordon was again unanimously re-elected President, for the fourth consecutive term; Louis E. Jallade of New York was elected Vice-president; Edward W. Loth of Albany, Second Vice-president; Henry Holder of Brooklyn, Treasurer; Frederick C. Zobel of New York, Secretary; and Walter H. Volkenning of Brooklyn, Financial Secretary. Directors for three years, James Riely Gordon, Henry Holder, John Bergeson, Hugh Tallant, and Louis E. Jallade, and for one year, Nicholas Serracino and Frederick C. Zobel.

There were many interesting discussions. The concensus of opinion was that the present prices of labor and material will remain, and that this is the most advantageous time to build, in advance of the great amount of building which will undoubtedly be inaugurated before Fall. Many important steps are in contemplation this year, for the future welfare of the architectural profession. The society is heartily co-operating with other architectural societies and with real estate and building organizations allied with the profession. A number of applications for membership were received, and a number of new members were elected. In spite of the war this has been the Society's most prosperous year, it was stated.

To Unify State Registration Laws

It has for some time been apparent that it would be desirable to bring about unification of the work being done by the various State Boards which are administering registration laws for architects. With this in view, an informal meeting was held at the time of the Institute Convention at Nashville by representatives of a number of registration boards. An informal association was organized which will seek to co-relate the experiences of the various States having such laws, enabling new boards to profit by that experience.

It is hoped that it will be possible to bring about a conduct of examinations as to make possible the exchange of credits between States, and thus facilitate the admission to practice in one State of architects who have already qualified in another. It is desirable that a special session be devoted to this subject at future Institute Conventions, for these State Boards, if properly constituted, will have the setting up of the standard of admission to the profession entirely in their hands.

The officers of the informal organization above referred to are Professor Emil Lorch, of the Michigan State Board, as Chairman, with Emery Stanford Hall, President of the Illinois State Board, acting as Secretary. All those interested in helping this work should address Mr. Hall at 332 South La Salle Street, Chicago, Illinois.

Survey of Country's Economic Status Indicates Early Start of Construction Activity

IN a report just made showing the present status of economic conditions of vital importance to the country's welfare, John W. Platten, president of the United States Mortgage and Trust Company, states that the construction situation promises early improvement. Other indications are that the labor supply is at present adequate, and returning soldiers are being generally employed without unduely disturbing the labor market. Real estate conditions are found to be excellent and mortgage money is easy. Retail trade proves to be excellent. The Federal Reserve System is shown to be functioning in a highly satisfactory manner and the Federal Farm Loan System is gradually gaining in influence and popularity.

President Platten's report is in substance as follows:

Only in rare cases does there appear any shortage of labor. Indeed, it might easily be said that the contrary is true, due to returning troops and the closing down or curtailment of industries which were unusually active during the war. In view of these two important and far reaching factors it is evident that only the most intelligent effort and co-operation could have prevented an unsatisfactory situation. It is therefore most gratifying to find that employers, public officials and organizations generally have given the matter earnest and timely consideration with the result that up to the present time there is no serious disturbance.

It is true that there are sporadic outbreaks, a few strikes and some professional agitation, which, however, can no longer be classed as extraordinary or preventable even under the most favorable circumstances. Workers leaving the Government service are thus far being quite generally reinstated in their old positions, and this without in any large measure displacing the extra help taken on during the last two years.

From reports in hand, it appears that rents have increased almost universally, the percentage running from 10 per cent to 50 per cent, with occasional excessive advances in business space strategically located. The lack of new construction in the last two kears, during which practically all available space came into demand, the flow of labor to industrial centers and the cost of labor and materials preventing needed new construction, have combined to force rents up to their present high levels, some of the non-industrial cities proving the only exceptions to this rule.

There are few large building operations in progress at the present time but there is considerable construction of dwellings, and a few business structures are under way. Building in a large sense, however, is not making any great headway, being unable thus far to adjust itself to the prevailing high prices of labor and material.

Organized labor is making vigorous efforts to maintain the present wage scales but the indications are that lower levels in some cases are bound to come. Reductions in a few lines indicate that material prices may possibly be on the point of a downward movement, but any immediate plans based on such development would doubtless be somewhat premature. However, these conditions considered in the light of the great need for new construction, give reasonable grounds for expecting a building campaign of good proportions at a reasonably early date.

One fact which stands out clearly in the Real Estate situation is the insistent demand for dwellings. This has literally forced a limited amount of home and apartment house building and vastly increased the rental demand for all available space of this nature.

In the wheat growing area the Government guaranteed price for the 1919 crop has resulted in a good demand for wheat land. There is considerable activity in farm land generally, and more or less activity in small acreage plots. Oil and fruit lands are also in favor. Mortgage conditions are easy, with plenty of money available and rates declining.

Retail trade is in a healthy, flourishing condition, marked by only a few instances of depression and caution as to overstocking. The splendid possibilities for trade expansion opened up by the war are being met by a responsive appreciation of the part of business men, manufacturers, trade organizations and public officials. Particular attention is being given to exports, the improvement of waterfront facilities and the location of new industries. Significant, too, are the plans for bringing under cultivation largely increased areas through irrigation and other methods.

The Federal Reserve System is so well established and its beneficial operation so clearly demonstrated that it is now taken as a matter of course. By taking care of the war financing, the extension of credit, building of confidence and stabilizing conditions throughout the United States, it fills a place possibly higher than was anticipated by its most optimistic supporters.

The Federal Farm Loan System has proven of immense benefit in sections where opportunity has been given to show its worth. It continues to stimulate production by providing funds in large volume for long terms and at low interest rates. The one disappointing but perhaps natural feature is that it does not yet appear to be fully understood in some quarters, with the result that the benefits which it might confer are far from being fully realized. The indications, however, are that it is only a matter of a comparatively short time before it will be more generally known and utilized.

The following digest shows the trend of business and fluctuation of residential rents in the last two years, new building, labor and material prices and mortgage money in various sections of the country:

In the South—From reports received, rent increases are universal, ranging from 10 per cent to as high as 50 per cent. New building generally limited to dwellings and betterments, although a few large operations are under way. Good season in prospect. Labor and materials show little changes as yet, but generally appear to be weakening, although opposite tendency exists in one or two cities. Residential property is in big demand, with occasional instances of activity in business buildings and oil and farm land. Renting space very well filled. Mortgage money noticeably easy, with rates reacting accordingly.

In the Central West—Rents have benerally increased but not to an excessive degree. The range is from 10 to 25 per cent, the larger increases usually applying to business space. A few large building operations are under way, but new construction is largely held up by present high prices of labor. There is some tendency toward reductions, but not to a degree warranting any early relief. The real estate market is strong in some lines, particularly renting, as the recent lack of new construction leaves practically no surplus space on hand. There is an insistent demand for dwellings and some call for farms and vacant property. Mortgage money is plentiful, as a rule, with rates easing off.

In the Southwest—Rents are generally higher, 10 to 25 per cent. There is some home building in response to urgent demands, but construction work generally is waiting more favorable prices. Labor is naturally anxious to maintain the present high wage scales, but with the general readjustment, some concessions are likely. Building materials show some reduction. The real estate market

shows a brisk demand for dwellings with considerable activity in farm lands. The rental situation is good and some leases are being made on oil lands. There is an ample supply of mortgage money throughout the Southwest with the natural result of decreasing interest rates.

In the Inter-Mountain section—Rents are 10 to 50 per cent higher except in Spokane, which was deserted by its floating population when the neighboring industrial centers went on a war wage basis. There is considerable home building and planning, and a few larger operations but other projects are held up. These show a downward tendency. There is a good demand for homes, also some sales of small suburban plots. Around Spokane, wheat and fruit land command good market. Mortgage funds are ample with rates tending downward.

On the Pacific Coast—Rents are uniformly higher, ranging from 10 to 50 per cent, with some choice retail space showing excessive advance. In response to a strong demand for homes there is a limited amount of construction. Materials show a tendency to lower levels. The real estate market shows a steady demand for moderate priced homes for occupancy by purchasers and wheat land is looked on with favor. Mortgage money is plentiful, with rates tending to ease off.

"Open" Building Material Market Forces Prices Upward

WITH the return to an "open" building material market, forced by the recent abandonment of the Industries Board as a result of its conference with the steel industry, there has come a decided trend upward in commodity values. When it was learned that there was to be no further attempt by the Government to stabilize prices, architects and builders manifested keen interest as to just what the effect would be, and in what direction quotations would fluctuate.

There is no question but that construction activity is fast resuming its normal cadence, but weekly price tables also show that with the improved demand there has come an upward price movement and that the low level has been reached. The question now is how long can prices hold at present levels. Brick and lumber are now leading in the upward movement, due to the scarcity of labor and exceptionally high wage scale. The industry deems it most unfortunate that at this time building costs should be advanced.

It was clearly shown that while the Industries Board and the Railroad Administration were at deadlock over prices in practically every municipality only the more daring speculators and those soundly financially backed proceeded with building projects. The strangling of the fundamental laws of economics and substitution of price fixing, without any question, retarded the impetus that long ago should have been given post-war construction. Only when leading steel corporations proved that no further reduction in prices would be made without a reduction in wages was the fight for an "open" market won. But in the meantime business had been severely handicapped.

Before its retirement the Industries Board released hardwood manufacturers and other commodity interests from their promises of co-operation in price adjustments. In explanation of the withdrawal of the board, it was said that it had for its object the resumption of construction and production through the stabilization of prices. The legal phases of the question as raised by the Attorney General's comment on the illegality of price fixing failed to disturb the opinions of Secretary of Commerce Redfield or Mr. Peck, who referred to the opinion of the Department of Justice as negligible. The results sought could have been obtained, chairman Peck contended, without violation of the Sherman Act, as the plan was to ascertain and make public fair prices reached by agreement. When the Railroad Administration refused to buy rails at a fixed price, it was because Director General Hines believed that it would cause a later inflation of values. From the upturn in prices the past two weeks this theory has been borne out, not only in structural steel, but in common brick, sand, gravel, grit, broken stone, cement, plaster, lead, oils, and particularly lumber, as well.

An interesting sidelight on the many different problems affecting the progress of construction is to be found in the fact that contractors in estimating costs on suburban home construction are submitting bids that are decidedly close. On a recent project it has been disclosed that two bids on a country home were for the same amount and that the third was for but $170 less. When the cubage cost based on these bids was found to be fifty cents and that similar work was being done elsewhere at from thirty to thirty-five cents, suspicions were aroused that there was collusion among the contractors in that section, and that they were attempting to profiteer in their work, especially, as in this instance, when the architect was from another locality. If these suspicions are confirmed it would seem that contractors in certain sections are by these irregular methods offering a severe handicap to construction.

Investigation into the cost of manufacturing various materials by the Illinois Senate as a result of suspicion that combines of dealers were holding up the prices of the various commodities failed to produce evidence to substantiate these reports. Manufacturers in the cement, stone, brick and lumber industries were called in, their books gone over, and every possible effort made to account for the present cost of their products. It was clearly shown that with the present high cost of labor there can be no reduction in manufacturing costs at present.

Reports from THE AMERICAN ARCHITECT'S correspondents this week indicate that the building wave which has been working its way from the West is fast reaching the East. Two of the leading New York architectural firms have fifty-two distinct operations on their boards at this time, for many of which plans and specifications are about completed. Others are in the preliminary stages of closing the contracts. All of which indicates that the building boom is surely launched, having adjusted itself to the prevailing prices of labor and material.

The increased volume of material leaving the supply yard, the big demand for draughtsmen in the architect's offices, as well as the increasing commodity prices, are but few evidences of increased activities in construction projects. It is the actual start of post-war building, first the remodeling of old structures and building of low cost homes, and now the issuance of permits and the breaking of grounds for apartments and factories, that is stimulating many lines of business and making readjustment from war to a peace basis possible.

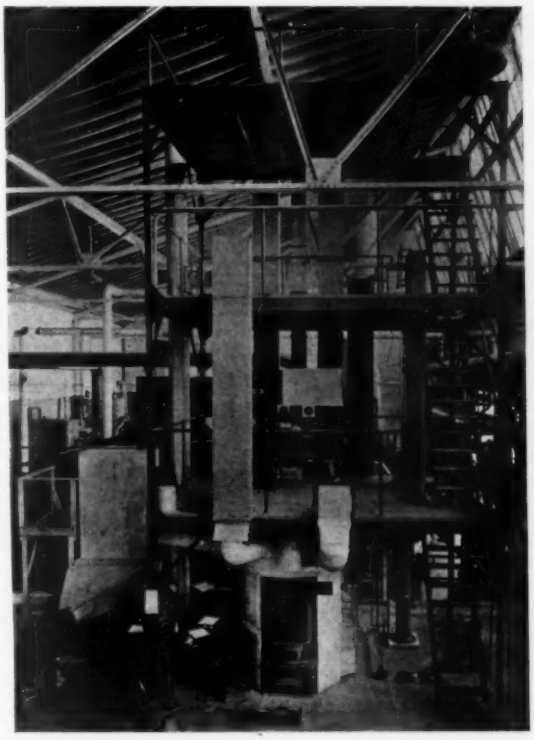
(*Continued on Page 772-A*)

Department of Architectural Engineering

Research Investigation of Warm Air Furnaces for House Heating

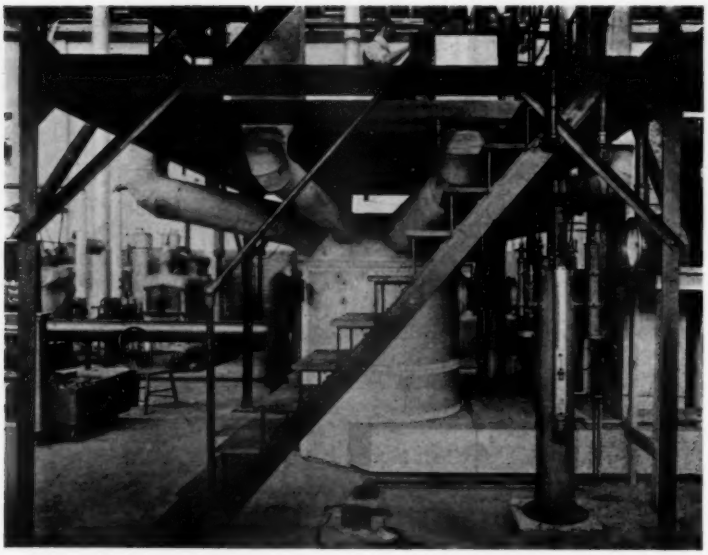
AMONG the many elements that constitute the building industry, there are several that are capable of being classed as unknown quantities. This is true because exact and definite data concerning them has never been secured. Among these are included the warm-air furnace for house heating. It seems remarkable that such an important factor in the heating of dwellings should have been so long neglected in this regard, and possibly the rapid advances made in the art of steam and hot water heating have so shaped competition that the manufacturers of warm-air furnaces were forced to recognize the necessity of making a scientific investigation of their own product.

The National Warm Air Heating and Ventilating Association, at their 1918 convention, appropriated the sum of $8,000 to be used for a scientific investigation of the warm-air furnace. It was decided to have this investigation made at the University of Illinois Engineering Experiment Station under the direction of A. C. Willard, Professor of Heating and Ventilating. During the first year's work, now drawing to a close, this sum has been expended with a like amount of money contributed by the University of Illinois. Professor Willard's staff, conducting this investigation, consists of A. P. Kratz, Research Assistant Professor; W. E. Pratt, Research Associate Special Investigator; V. S. Day, Research Assistant, and F. G. Wahlen, Graduate Research Assistant. The National Warm Air Heating and Ventilating Association deposited the funds with the University authorities to be expended by them. The Association has an advisory committee which has charge of securing funds and co-operating with the investigators if required. The appointment of the staff and the conduct of the tests has been entirely under the control of the Director of the Engineering Experiment Station, and the results, as are all of those emanating therefrom, will be entirely free from the influence of any personal or commercial interest. A progress report will be made to the 1919 convention of the Association to be held at Columbus, Ohio, on June 11. Allen W. Williams, Columbia Building, Columbus, Ohio, is Secretary of the Association.



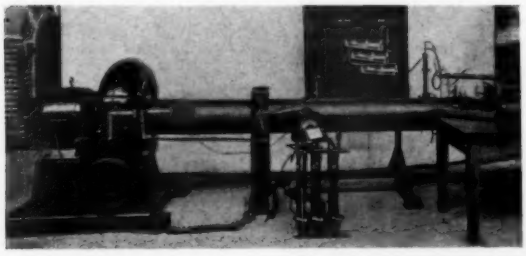
General view of the furnace testing plant. The switchboard for the electric thermo-couples is located on the first floor above the furnace. At the left is a portion of the auxiliary fresh air inlet. The construction of the frame work supporting the various floors and the various vertical ducts are shown. Tests have been made with the galvanized iron jacket insulated with a 1½ in. hair felt covering.

A description of the apparatus used for test purposes is here given, and some of the difficulties encountered are described. A steel channel and angle iron frame was constructed, on which three heavy plank floors were placed. These floors or platforms represent three floors of a dwelling and are 8 ft. apart from top to top of floors. Steel frame stairs are used, giving easy access to all



Side view of the furnace showing the fresh air inlet and the Uehling CO_2 Recorder at the right. In the rear is the 10 in. tube forming a portion of the auxiliary fresh air inlet.

floors. This structure is erected in the Mechanical Experimental Laboratory. The installation consists of a No. 270 hot air furnace, made by Moore Brothers, Joliet, Illinois. This is a standard fur-

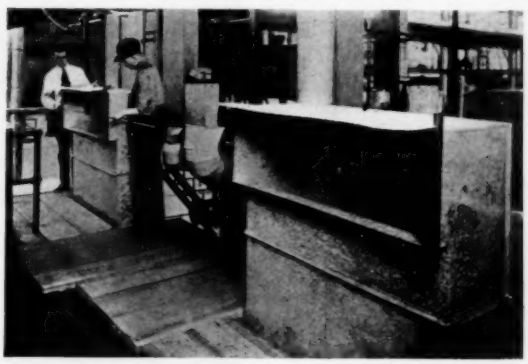


View of a portion of the auxiliary fresh air inlet apparatus. At the left is the exhaust fan attached to the 10 in. pipe connected to the auxiliary inlet shown at the left of the general view of the test plant. The apparatus for regulating the fan and damper is shown. At the table can be seen the Pitot tube for measuring the volume of air passing through the inlet. Readings are taken at various points in the diameter of the 10 in. tube. With velocity conditions at the auxiliary inlet identical with those at the furnace inlet the volume of air passing into the inlets is thus determined.

nace with an ordinary solid cast iron fire pot and galvanized iron jacket. There are four 12-in. round horizontal ducts for the first floor, two 9-in. and two 8-in. for the second floor and two 9-in. for the third floor. These horizontal ducts are covered with an asbestos paper. The first floor ducts are connected to a boot leading to the base board registers, as shown in the illustration. The other horizontal ducts connect with vertical flues after passing through the boots at the basement ceiling level. The vertical flues are placed between two studs with plaster board nailed to the edges, thus enclosing the flues. The passage of air between the flue and the stud and plaster board closure is prevented. Single and double-wall vertical tin flues are installed to the second and third stories, and the variation in performance is noted. Electric thermo-couples are installed in each of the ten registers, six in the base of two vertical flues leading to each floor, one in the smoke pipe and one in the fresh air inlet. These eighteen thermo-couples are connected with a switchboard located on the first floor, where the temperature readings are taken.

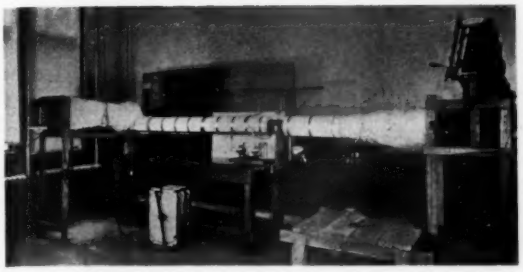
A thermometer is placed in the horizontal duct at the left of the front of the furnace and is under constant observation in order to maintain a constant firebox temperature. The fluctuation of temperature is very small, and the average is well maintained. As yet only anthracite coal is used, and the firing, burning and weighing of the residual ash conforms to a standard procedure.

Temperatures are not taken in the jacket, owing to the radiant heat dispelled from the furnace, but it is expected that a method of measuring the air temperature at that point will shortly be developed.



View of the furnace fresh air inlet at the left and the auxiliary fresh air inlet at the right. The anemometer readings are being taken at 24 points on the face of the inlet to the furnace. Identical velocity conditions are established in the auxiliary inlet by means of an induction fan shown in another illustration.

The velocity of the air passing through the registers is measured by a special type of anemometer. This anemometer is attached to a square steel bar of sufficient length to permit of its being



Auxiliary apparatus in small research laboratory. At the left is an electric heater placed in the end of the pipe which leads to an electric driven fan. The air is drawn through the heater and passed into a 5 in. tube which expands at the right end into a horizontal furnace duct which passes through a boot into and through a register. The same temperature and velocity conditions are established at the register as may be found at each register in the test plant. When these conditions are established readings are taken from the Pitot tube apparatus connected with the 5 in. pipe and the volume of air passing through the register is determined. By means of this apparatus the volume of air passing through all of the registers is measured. This is found to be slightly in excess of the air passing through the inlet and probably the result of infiltration through openings in the furnace jacket.

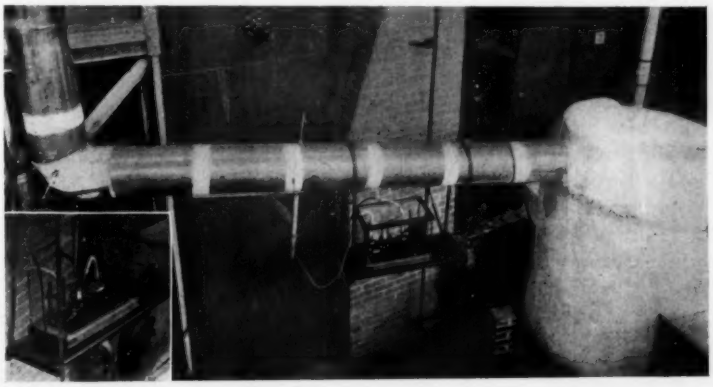
placed in three positions across the length of the register. Two steel bars are attached to the sides of the registers, in which are cut three notches in which the bar slides. By this means nine readings are taken on each register face and in identically the same position. The average of their readings gives the velocity of the air travel through the register. On the fresh air inlet, 17 x 47 in. in size, six horizontal readings are taken on each of four positions in the height of the inlet, giving twenty-four readings on the face of the inlet during a period of two minutes. This method of securing the average velocity is shown in the illustration of the fresh air inlet.

By these means the temperature of the air at the inlet, at the base of the vertical ducts and at the registers is found, as well as the velocity of the air at the inlet and the register faces.

To check the volume of the air passing through the furnace, a comparative inlet and register measurement is taken on an auxiliary apparatus. At the left of the furnace installation shown in the illustration is shown an auxiliary inlet connecting with a 10-in. tube. This tube in turn terminates in an exhaust fan, shown in the illustration. By means of this fan the same anemometer readings are established as occur in the furnace inlet. As shown, a Pitot tube is inserted and readings are taken at several points in the diameter of the 10-in. tube, and thus the volume of air entering the furnace inlet is found. The apparatus for controlling the speed of the fan and the damper is also shown.

In a small research laboratory is installed a device for the purpose of checking the volume of air passing through the registers. At the inlet end of this, at the left in the illustration, is placed an electric heater attached to a duct leading to a fan. Leading from this fan, to the right, is a 5-in. tube which expands into a horizontal duct which enters a boot above which is installed a register. By manipulating the furnace and fan identical temperature and velocity conditions are established as were found at the registers in the furnace installation. A Pitot tube is inserted in the 5-in. tube, by which the volume of the air passing through the register is determined. It is found that the volume of air passing through the registers is slightly greater than that passing through the inlet. This is probably due to infiltration into the jacket.

An auxiliary plant is also used to work out problems on horizontal and vertical ducts. In this work the horizontal ducts will be of various lengths and inclinations. The vertical flues will be of different sections, round and rectangular, and the effect of any particular departure in design and installation from a typical standard is determined. The air is heated by a steam coil to any desired temperature and the water of condensation is measured. Temperature and velocity readings at the register are taken in the same manner as in the installation before described. The effect of various types of



Auxiliary plant for problems on vertical and horizontal ducts, different sizes and shapes of ducts will be tested with different inclinatons and lengths of the horizontal duct, insulated and not insulated. The air is heated by steam coils in the large air chamber at the right. The glass encased Wahlen Draft Gauge is shown suspended from the duct with which the draft is measured at various points in the diameter of the duct. An enlarged view of the gauge is shown in the lower left-hand corner. Temperature readings are taken at the base of the vertical duct, at the register and in the duct near the hot air chamber. Velocity measurements are taken at the register with an anemometer.

insulation will be measured. It was found that the draft in the duct was so slight that no known gauge would measure it. It was given to Mr. Wahlen to design and construct one, and he has succeeded in constructing the Wahlen gauge, which indicates 1/10000 in. head in alcohol, which is comparative to 1/12000 in. head in water. This instrument is shown in the glass enclosed cage in the illustration, and readings are taken at various points in the diameter of the pipe. This instrument is so delicate that the passing of the hand in front of the orifice causes it to register a variation in air conditions.

This description will indicate the vast amount of labor and time required to make the installation of the main testing plant, the installation of the auxiliary plants and the designing and making of the delicate instruments required for this particular work. At the same time certain conversion charts were prepared, from which the various instrument readings are quickly converted into final form.

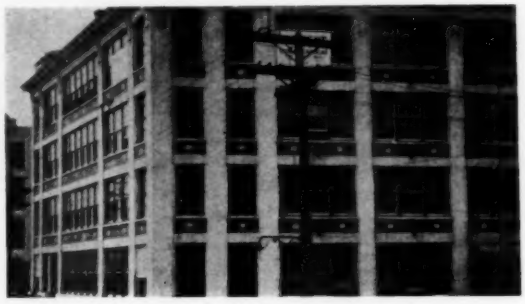
The program aims to establish (1) a reasonable basis for rating furnace performance, (2) to compare the performance of several standard types of furnaces, and (3) to determine what are reasonable velocities in pipes. The tests made at this time are to establish the capacity of a furnace to heat a given number of pounds of air from one given temperature to another temperature during a given period of time. The field of investigation is very great, and in order to complete it two more years of work may be required. New and important problems are continually arising which must be solved. Much data used in the design of warm air furnace heating plants has been found to be incorrect and conditions that have never been contemplated have been discovered. It will only be by means of such an investigation as this that the actual facts concerning warm air furnaces and their use can be known. It is of the utmost importance to that portion of the building industry devoted to the construction of dwellings mainly, and some other types of buildings, that this work be carried on to completion. When completed, and the various furnaces are standardized as to their performance and this data is available for installation design, the architect can proceed with some assurance of success in the use of warm air furnaces. This will certainly be a most welcome change from the conditions that now obtain.

Reinforced Concrete Building Stands Extreme Overload

REINFORCED concrete structures have often been loaded far in excess of their designed safe carrying capacity, both for the purpose of testing the efficiency of certain types of design and for other experimental purposes. The University of Illinois, in Bulletin No. 106, records the results of one such test conducted on a flat slab type of reinforced concrete building about to be demolished.

While overloading also occurs to a greater or lesser extent in structures under actual service conditions, it is seldom that a building is called upon to sustain an overload as great as that which was recently placed upon the second floor of a reinforced concrete building in Long Island City, N. Y.

The structure in question was erected about three years ago, and is one of a group of several similar buildings. It is four stories high without cellar, built over marshy ground upon a concrete pile foundation, with floors designed to support a live load of 200 pounds per square foot. The section in which the overloading occurred is 80 ft. wide by 218 ft. long, divided transversely into three bays, the outer bays being each 26 ft. 4 in. wide, and the center bay 27 ft. 4 in. wide. In a longitudinal direction the columns, which are circular in section, are spaced 18 ft. on centers. The floor construction is of the girder, beam and slab type with troweled floor finish. The girders are 14 in. by 26 in., in section, and have a clear span of approximately 16 ft.; the beams are 8 in by 22 in. in section, spaced 6 ft. on centers, the beams in the outer bays having a clear span of 25 ft. 2 in. and those in the center bay of 26 ft. 2 in. Beams and girders are reinforced with heavy twisted steel rods (about 1 in. square) some of which are bent up at the ends. The slab is 4 inches thick and reinforced

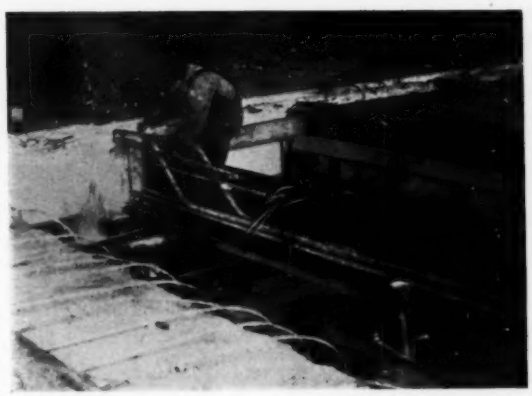


General view of building.

Interior view of second story showing heavy overload of tin. The work of removal has just been commenced.

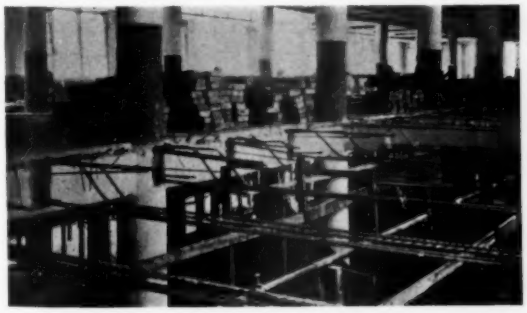
by light round corrugated bars spaced about 4 inches on centers. Gravel concrete was used throughout, probably of a 1:2:4 mix.

It seems that the owners of the building had not occupied it for some time, but had leased it to a concern who in turn sub-leased the first and second stories to a warehouse man. This sub-lessee began using the two lower stories early in the year for the storage of sheet tin prior to its being shipped to Japan. This material is boxed in individual cases, each having outer dimensions of approximately 18½ in. by 14 in. by 4 in. deep, and of 122 lbs. gross weight, or 68 lbs. per sq. ft. when laid flat. From this it will be seen that the allowable safe load of 200 lbs. per sq. ft. would have been exceeded by 3 lbs. had the boxes been piled but one foot (or three cases) high. From the illustration showing the second story after partial removal of the cases it will be seen that the tin was stacked nearly uniformly over the entire floor to a height of 15 cases (or 5 ft.), with a total resultant live load of 1020 lbs. per sq. ft., *over five times the designated safe load.* In some places the cases were stacked 20 high, thus loading the floor to 1360 lbs. per sq. ft. The equivalent average uniform load over the entire floor, allowing for the two longitudinal aisles near the columns, was between 900 and 1000 lbs. per sq. ft., as nearly as can be determined, but in many panels the loading was much higher than this figure. That these heavily loaded sections of the floor did not collapse is a remarkable testimonial to the efficiency of this type of construction.



Boxing beam forms around reinforcing rods left in place.

The sub-lessee had several carloads of sheet tin on a siding, and apparently it was his intention to add this to the already overloaded floor. However, when the loading had reached the stage described, warning cracks in the beams and girders began to appear. The night watchman became alarmed by a series of rumblings or creakings, apparently due to the partial rupture of the concrete as the



Condition of outer bay after concrete had been removed. Note beam reinforcing rods left in place; also that cases of sheet tin stacked in center penal are located over girders.

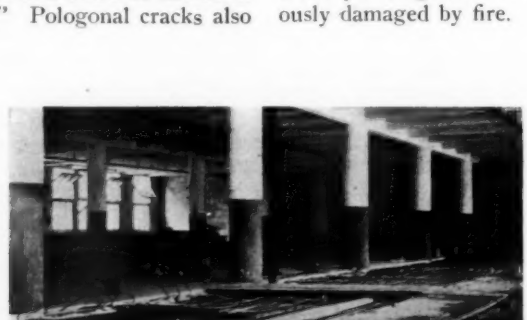
View looking down on first floor. False work for supporting forms already in place.

deflection increased and the cracks opened. These seemed so ominous that this individual spent the rest of the evening in the fresh air outside the building and reported approaching trouble in the morning. The matter shortly thereafter came to the attention of the Bureau of Buildings, and Superintendent Moore took prompt steps to relieve the dangerous situation. An "unsafe" building survey was immediately held, and under the powers vested in him by law and acting under a court order, based on the findings of the board of survey, the Superintendent of Buildings caused the removal of the material and the shoring up of the weakened second floor construction. An examination of the floor after the load had been removed indicated a continuity of action in the structure from wall to wall transversely, cracks having appeared on the upper surface on each side of, and parallel to, the two lines of longitudinal girders at approximately the point of inflection, this action thus reducing the bending moment at the center of the beams to $\frac{WL}{12}$ or possibly to $\frac{WL}{20}$. That real "T" beam action did occur between beams and slab is evident from the fact that in some cases the cracks extended through the slab and into the beam proper or stem of the "T." Pologonal cracks also appeared in the upper part of the slab roughly concentric around the columns.

The elastic limit of the construction (if such a property exists for concrete) was evidently exceeded, and at the present time the work of reconstruction is in progress as shown in the illustrations. The concrete slab and beams in one of the outside bays have been removed leaving the heavy reinforcing rods of the beams exposed, but firmly embedded in the wall and interior longitudinal girders at the ends. The slab reinforcing rods were removed, straightened, and reused. Wood forms were constructed around the beam reinforcing rods that had been left in place, and the new concrete beams and slab poured. This process will be repeated in the center and other outside bay, thus replacing the entire second floor construction without any great difficulty.

This experience would seem to refute the statement so often made that a damaged reinforced concrete structure is practically unrepairable and must be demolished.

Reconstruction work of a somewhat similar nature, it will be recalled, was satisfactorily completed in the Edison factory buildings at Orange, N. J., a few years ago after those buildings had been seriously damaged by fire.



New slab being placed. Reinforcing rods showing are those taken out of demolished floor slab, straightened and re-used.

Present Status of Industrial Lighting Codes*

Part II

By G. H. Stickney

Glare Limit Specification

THE establishment of proper limits for glare is probably more important than even the matter of intensity. While the provision of sufficient light is fundamental, it is also better understood and has a more obvious relation to production. It seems to be generally agreed that more employees suffer from glare than from insufficient light. Certain lighting conditions are readily recognized as glaring, while others are equally recognized as free from objectionable glare. But when it comes to drawing a definite limit between danger and safety, our present inability to measure or accurately define objectionable glare makes it necessary to utilize a qualitative rather than a quantitative specification.

The I. E. S., Pennsylvania and New Jersey codes simply require that lamps be "suitably shaded to minimize glare," with an explanatory note that glare from lamps or unduly bright surfaces produces eye-strain and increases accident hazard. This is supplemented by the requirement (under "Distribution of Light on Work") that "sharp contrasts" of intensity on the work be avoided.

The New York code requires that "exposed bare lamps, located less than 20 ft. above the floor, shall be provided with shades, reflectors, diffusing glassware or other accessories, to eliminate or minimize glare." Sharp contrasts of intensity on the work must also be avoided.

The Wisconsin code goes a little farther and says,

> Lamps suspended at elevations above eye level less than one-quarter their distance from any position at which work is performed, must be shaded in such manner that the intensity of the brightest square inch of visible light source shall not exceed seventy-five candle power.
>
> Exception: Lamps suspended at greater elevations than twenty feet above the floor, are not subject to this requirement.
>
> Note: (a) Glare from lamps or unduly bright surfaces produces eye-strain and increases the accident hazard.
>
> The brightness limit specified in this order is an absolute maximum. Very much lower brightness limits are necessary in many interiors illuminated by overhead lamps, if the illumination is to be satisfactory. In some cases the maximum brightness should not exceed that of the sky (1.5 to 3.0 candlepower per square inch).
>
> Note: (b) When the principal work is done on polished surfaces, such as polished metal, celluloid, varnished wood, etc., it is desirable (but not mandatory at present) to limit the brightness of the lamps in all downward directions to the amount specified in this order.

For local lighting the Wisconsin code establishes the limit of 3 candle power per square inch, whenever visible from any working position. This lower limit is selected "because the eyes are more sensitive to strong light received from below."

There is a difference of opinion among illuminating engineers as to the proper values of candle power per square inch to be applied to this specification, while some think a better principle of specification can be determined. It has been suggested that glare be specified in terms of contrast of brightness, perhaps expressed in ratios. Some experimental work has been done along this line and at least two experimenters have made up experimental instruments for measuring ratios of brightness. It is recognized that there is a considerable range in the permissible contrast for different processes for different directions, especially of elevation, and for different intensities[10].

It therefore seems likely that sometime in the future the codes will have some sort of glare classification corresponding to the intensity classification. But advance in such a direction cannot be made until further investigation and development has provided a reliable basis.

Considerable space has been devoted to the engineering limitations of the present glare specifications, with the view of interesting experimenters and engineers in the solution of the problem. On the other hand, the present specifications must not be regarded in any way as a failure. They are practical, working specifications which will do much to improve lighting conditions. They provide the means of eliminating practically all conditions which constitute a serious menace, and while the lack of a defined limit may in some cases be taken advantage of by either the manufacturers or the inspectors, such instances are likely to be quite exceptional. In reality the present specification is more definite than many existing legal requirements in force regarding matters other than engineering.

Distribution of Light

The New Jersey code reads: "Lamps shall be installed in regard to height, spacing, reflectors or other accessories, so as to secure a good distribution of light on the work, avoiding objectionable shadows and sharp contrasts of intensity."

The distribution of light is partly taken care of in the intensity and glare limit specifications. That is, the requirement that intensity shall not fall below a certain minimum, coupled with economic considerations, tends to avoid a wide variation in intensity, while the latter also requires the elimina-

*Continued from issue of May 14, 1919.

tion of dense shadows on the work. As worded in most codes these rules do not call for the elimination of bright striations of light, or, in brightly lighted rooms, of shadows which may interfere with vision, but still have an intensity above the minimum limit.

The distribution of light rule covers these omissions by calling attention to the relation of lamp equipment and location to light distribution. The lighting effects referred to, if objectionable, are so obvious that they are readily recognized when attention is called to them. Therefore, the rule seems likely to accomplish its purpose without much difficulty.

In the Wisconsin code a further requirement is made that the local lighting shall be supplemented by a moderate intensity of overhead lighting, except when reflection from light colored surfaces produces a general illumination. This renders more definite a feature than is implied by the general requirement of the rule.

Emergency Lighting

Panics, which have occurred in crowded rooms when the lighting has failed at the time of a fire, explosion or other emergency, have emphasized the necessity of avoiding any probability of darkness at such a time. There is, however, a wide variation in the actual needs of different workrooms. For example, where a large number of women workers occupy an upper floor surrounded by dangerous conditions, inflammable materials, etc., continuity of lighting is exceedingly important. But where a small number of employees are scattered over a large ground floor area, with convenient exits and without dangerous conditions, safety can be assured without an elaborate provision for continuity of lighting. Moreover, such provision as would be necessary in the first instance, might be prohibitively expensive for the second.

It has, therefore, seemed necessary to make only a general provision in the code, with the expectation that rulings would be made to cover specific cases, or that the detailed requirements would be supplied later by those having suitable experience. It is more a problem of safety engineering than of illuminating engineering.

The general requirement of the rule, common to most of the codes is: "Emergency lamps shall be provided in all work space aisles, stairways, passageways and exits. Such lamps shall be so arranged as to insure their reliable operation when through accident or other cause the regular lighting is extinguished." In some States the rule has been expanded to include instructions for insuring reliable operation—separate mains or sources of energy being required.

For example, the New Jersey code requires—

> Emergency lighting systems, including all supply and branch lines, shall be entirely independent of the regular lighting system and shall be lighted concurrently with the regular lighting system and remain lighted throughout the period of the day during which artificial light is required and used.
>
> Emergency lighting systems shall be supplied from a source independent of the regular lighting system wherever possible. This source of supply and controlling equipment shall be such as to insure the reliable operation of the emergency lighting system when through accident or other cause the regular lighting system is extinguished. Where a separate source of supply cannot be obtained for the emergency lighting the feed for emergency lights must be taken from a point on the street side of all service equipment. Where source of supply for the regular lighting system is an isolated plant within the premises an auxiliary service of sufficient capacity to supply all emergency lights must be installed from some outside source, or suitable storage battery; or separate generating unit may be considered the equivalent of such service.

It is apparent that the question of insuring the source of supply is one which is open to considerable discussion, involving, as it does, the reliability of the generating station and various classes of supply lines. Not only do the characteristics of service received from electric central stations and isolated plants have to be considered, but in some cases gas service and other illuminants.

It is evident that conditions of reliability vary considerably in different instances and that leeway must be allowed according to the merits of the particular cases. Where central station service is employed, it has usually been assumed that independent wiring to the street main provides a sufficient safeguard.

There is a tendency in some quarters to require the emergency lighting to be in operation whenever the regular lighting is in use. This comes from the apprehension of deterioration of unused equipment as well as the anticipation of failure to put the emergency lighting into operation instantaneously. In many cases simultaneous operation may involve an excessive expense. The provision of an automatic system, with reasonably frequent inspection and tests, should provide ample protection.

Where the system is not electric the automatic control may present more of a problem.

Most of the codes do not specify what intensity of lighting shall be provided. In New York State the emergency lighting is provided for in the law, while the code specifies one-quarter foot-candle as the intensity to be provided. This value, which might be implied from the intensity table, is being considered for inclusion in other State codes. It seems to be the reasonable value to require for exits, stairs, hallways and passageways, and also for the main aisles of large workrooms. It might, however, involve an unnecessarily high investment in lines and equipment, to provide such an intensity in all work space aisles.

(To be concluded)

Stained with Cabot's Stucco Stains
Harland A. Perkins, Architect, Boston

A Four-Year Record of
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Gentlemen: Wakefield, Mass., November 11, 1911.

Last spring I used over two hundred gallons of your Waterproof Cement Stains on Miss Boit's new house at Wakefield. This was a job I was very particular to have right, and I am glad to say your material has proved entirely satisfactory in every way. JAMES F. SHERRITT.

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In September, 1915, an examination of the Boit residence by an expert decorator showed that the Cabot's Cement Stains had worn so well and grown so soft and beautiful with age that he advised against re-coloring the stucco when the other parts of the house were painted.

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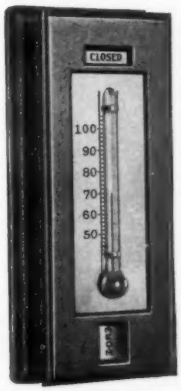

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Building Material Market Prices

(*Continued from Page 764*)

A digest of weekly reports showing the status of economic conditions vital to construction show that the labor supply is at present adequate and that returning soldiers are being generally employed without unduly disturbing the labor market. Real estate conditions are found to be excellent and mortgage money is easy. It appears that rents have almost universally increased from 10 to 50 per cent, with occasional excessive advances in business space stragetically located, forced by the lack of construction in the past two years and the flow of labor to industrial centers.

Organized labor is making vigorous efforts to maintain the present wage scale but indications are that lower levels in some cases are bound to come. It is true that there are sporadic outbreaks, a few strikes and some professional agitation, which, however, can no longer be classed as extraordinary or preventable even under the most favorable circumstances. Workers leaving the Government service are thus far being quite generally reinstated in their old positions, and this without in any large measure displacing extra help taken on the last two years.

In the real estate situation the insistent demand for dwellings has literally forced a limited amount of home and apartment house building and vastly increased the rental demand for all available space. But whether labor or material costs hold at the present level or not the great need for new construction has forced the present building campaign, which before many weeks will develop into one of big proportions.

(*From our Special Correspondent*)

CHICAGO, ILL., May 26.—Commercial construction is about to start in this city. Inquiry among the architects shows that while many are busy designing low cost homes, more are at work on plans for stores, factories, warehouses, and other commercial work. The permits issued daily also indicate that early June will see considerable speculative building under way, mostly apartment buildings.

The demand for all building materials continues to show steadygains as the season advances. Manufacturers say that while the dealers are not buying in exceptionally heavy volume individually, the demand is more widely spread and is coming from practically all consuming territories. It is evident from the size of orders that dealers are not any too anxious to replenish stocks heavily at present prices. They are buying to meet the present demand.

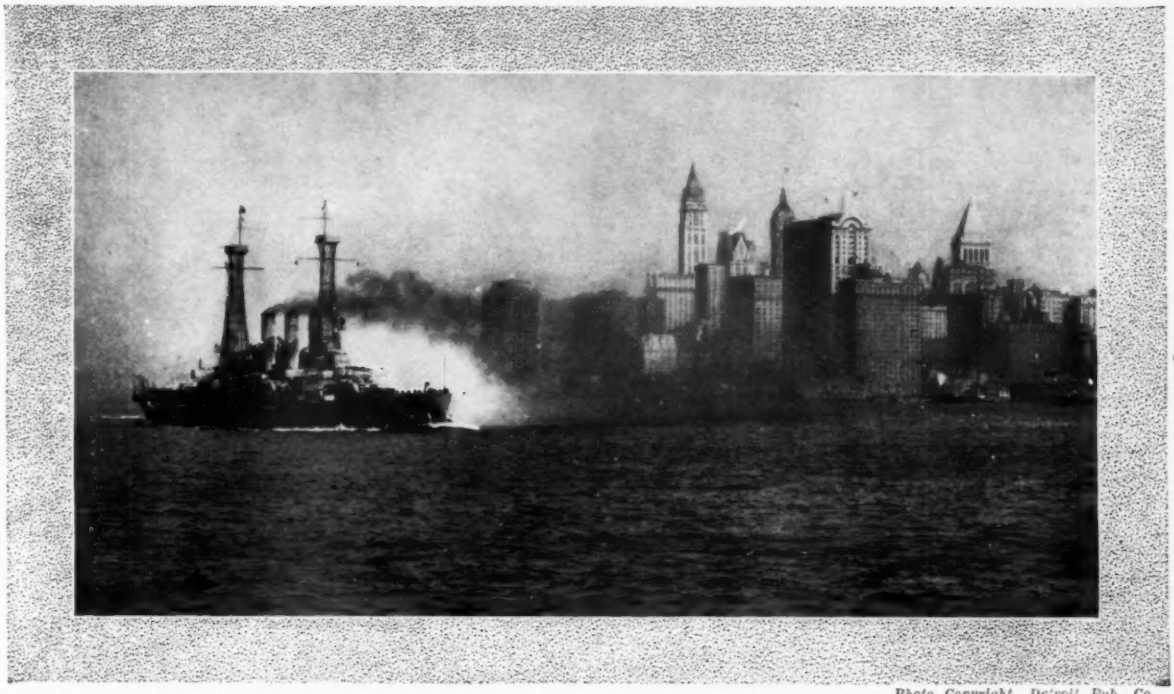
Lumber is advancing in price, with stocks exceptionally scarce at the mills, and dealers and wholesalers are experiencing difficulty in finding items suitable to fill their requirements. Oak and maple flooring is in better demand, with prices exceptionally strong. Further advances have been made on yellow pine and fir from the mill to the consumer. Brick, cement, lime, sand and gravel are all holding firm in price. The same is true of metal goods, including pipe, fititngs and all plumbing and steam heating supplies.

Competition continues strong among the dealers in all lines of material. Contractors are taking advantage of this condition in the buying. But in consequence of curtailed production regulating the supply, any price cutting at this time is not of sufficient moment to have the effect of causing a break in any of the material markets.

"We believe it to be our duty as public officials to advise the public not to delay building projects in the hope that prices will come down materially. We do not believe they will," was a part of the report of the committee recently appointed by the Illinois legislature to investigate building material prices. Its members started out in the belief that prices of building materials in Illinois were too high, but after holding a hearing in Chicago, before which representatives of the various building industries testified, they were "driven to the inevitable logical conclusion that existing prices widd not decline materially and that these prices express a new and substantially a permanent level upon which present and future business must be conducted. Reconstruction can only be accomplished in its real sense by every citizen subscribing to the doctrine 'Buy now, build now.'"

(Price quotations now current on building materials and supplies as quoted by dealers and jobbers for delivery in New York and Chicago follow. The quotations set forth are placed before readers of THE AMERICAN ARCHITECT to afford an accurate review of market conditions rather than for use as a basis for actual purchase. They will not only provide knowledge of the exact state of the market as to items quoted, but will also present a basis to judge conditions as affecting co-relating materials. Items marked (*) indicate an advance over last week, while those marked (†) record a decline. Other prices did not fluctuate during the week.)

	New York	Chicago
BRICK		
Face brick (delivered on job):		
Common (Delivered at job in Borough of Manhattan only), per thousand	$17.85	$12.00
Rough red	37.00	....
Smooth red	37.00	....
Rough buff	42.50	....
Smooth buff	42.50	....
Rough gray	45.50	....
Smooth gray	45.50	....
Colonials	25.00	....
BROKEN STONE		
(Delivered on job):		
1½ in. per cu. yd.	$3.25	$2.35
¾ in. per cu. yd.	3.25	2.35
BURNED CLAY		
(Delivered on job)		
Block partition:		
3 in., per sq. ft.	.18	.10
4 in., per sq. ft.	.20	.11
Chimney tops:		
12 x 12 for 8 x 8 flues	$3.50	$2.25
Flue lining:		
4 ft. x 8 ft., per ft.	.18	.12
4 x 12, per ft.	.22	.16
8 x 8, per ft.	.22	.16
8 x 12, per ft.	.27	.20
12 x 12, per ft.	.35	.28
8 x 18, per ft.	.40	.32
12 x 18, per ft.	.49	.42
18 x 18, per ft.	.67	.55
Wall coping (double slant):		
9 ft., per ft.	.24	.14
12 ft., per ft.	.27	.18
18 ft., per ft.	.36	.30
Wall coping (single slant):		
9 ft., per ft.	.26	.17
12 ft., per ft.	.30	.22
18 ft., per ft.	.42	.35
(Corners and angles four times the price of one foot of coping the same size.)		
Hollow Tile		
(Delivered at job, in New York below 72nd St.)		
2 x 8 x 12 partitions, per 1,000 sq. ft.	$70.15	....
3 x 12 x 12 partitions, per 1,000 sq. ft.	102.00	$67.90
4 x 12 x 12 partitions, per 1,000 sq. ft.	114.75	72.50
6 x 12 x 12 partitions, per 1,000 sq. ft.	153.00	99.60
8 x 12 x 12 partitions, per 1,000 sq. ft.	....	135.80
10 x 12 x 12 partitions, per 1,000 sq. ft.	....	167.50
12 x 12 x 12 partitions, per 1,000 sq. ft.	....	194.60
2 x 12 x 12 split furring, per 1,000 sq. ft.	63.75	....
CEMENT		
Per bbl. in 15 cent bags (Rebate 60c. per bbl. for bags)	$3.25	$2.80
COPPER SHEETS		
At the mill, hot rolled, 16 oz. base-price, per lb. (From jobber's warehouse add 2 to 3 cents. Cold rolled add 1c. per lb. to hot rolled.)	22½c.	22½c.
CORNER BEAD		
Per foot	.05	.05
FIBRE		
Per bushel	.30	.30



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For two years the Mellon Institute of Industrial Research has conducted experiments to prove the definite degree of its efficiency under varying conditions of temperature and pressure. A Table of the Monthly Coal Savings in Dollars and Cents by use of "85% Magnesia" has been prepared by this Institute, and the Magnesia Association will mail it to you for the asking. Also the illuminating booklet, "Let '85% Magnesia' Defend Your Steam." If you are an engineer or architect, ask us for the Specification for the scientific application of "85% Magnesia," compiled and endorsed by the above Institute.

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Late Quotations in Building Material Markets

Continued from page 772-A

GALVANIZED SHEETS

	New York	Chicago
Nos. 18 and 20 gauge, per lb	$6.12	$6.12
No. 26	6.42	6.42
No. 27	6.57	6.57

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(Discounts from manufacturer's price lists)

Single strength, A quality, first three brackets	77%	77%
Single strength, B quality	77%	77%
Double strength, A quality	79%	79%
Double strength, B quality	81%	81%
Plate—up to 5 sq. ft.	82%	....
Plate—over 5 sq. ft.	84%	....
Plate—up to 10 sq. ft.	...	83%
Plate—over 10 sq. ft.	...	82%

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¾ in. (Borough of Manhattan only), per cu. yd.	2.75	2.35

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27 x 48 x ½	30c.	....
32 x 36 x ¼	21c.	25c.
32 x 36 x ⅜	21c.	26c.
32 x 36 x ½	23½c.	....

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2 in. solid, per sq. ft.	7½c.	....
3 in. solid, 12 x 30, per sq. ft.	10½c.	....
3 in. hollow	10½c.	10c.
4 in. hollow	12½c.	11c.
6 in. hollow	17½c.	....

LATH

Eastern spruce, per thousand	$6.70*	....
No. 1 white pine, per thousand	....	$6.50
No. 1 hemlock, per thousand	....	6.00
No. 1 yellow pine, per thousand	6.25*	5.25

LEAD

American pig, per lb	5½ to 6	5½ to 6
Bar, per lb	7½ to 8	6 to 6½

LIME

Common, 300 lb. bbls., per bbl	$2.50	$1.40
Finishing, 300 lb. bbls., per bbl	3.70	....
Hydrated, in paper bags, per ton	17.25	17.00

LUMBER

(Retail prices per M, F.O.B.)

Yellow pine, 2 x 4	$53.50*	$47.00
Yellow pine, 2 x 6	50.00*	45.00
Yellow pine, 4 x 4	60.50*	52.00
Yellow pine, 8 x 8	69.50*	52.00
Yellow pine, 12 x 12	57.00*	57.00
Yellow pine, No. 1 boards, 1 x 6	60.25*	53.00
Yellow pine, No. 1 boards, 1 x 12	62.50*	56.00
Yellow pine, B and better flooring (plain)	62.50*	57.00
Yellow pine, B and better flooring (quartered)	74.50*	70.00
Douglas fir, 6 x 6 to 12 x 12	62.50	63.00
Douglas fir, 12 x 14 to 14 x 14	....	64.00
Norway pine, 2 x 4	60.00	50.00
Norway pine, 2 x 12	65.00	57.00
Hemlock, 2 x 4	47.50	46.00
Hemlock, 2 x 12	51.00	48.00
Oak flooring, 13/16 quartered white	144.50*	122.00
Oak flooring, 13/16 quartered red	136.00*	115.00
Oak flooring, 13/16 plain white	94.50*	82.00
Oak flooring, 13/16 plain red	94.50*	82.00
Maple flooring, 13/16 clear	86.00*	72.00
Maple flooring, 13/16 select	82.00*	69.00
Maple flooring, 13/16 No. 1 fancy	74.50*	58.00
Mahogany, 1" F. A. S.	300.00	300.00
Quartered oak, 1" F. A. S.	180.00	135.00
Plain oak, 1" F. A. S.	120.00	100.00
Red gum, 1" F. A. S.	87.00	70.00
Sap gum, 1" F. A. S.	56.00	60.00
Chestnut, 1" F. A. S.	87.50	75.00
Poplar, 1" F. A. S.	130.00	100.00
Birch, 1" F. A. S.	70.00	65.00
Spruce, random 2"	52.00	50.00
Spruce, wide	62.50	60.00

METAL LATH

Under 100 sq. yd., per sq. yd.	40c.	40c.

MORTAR COLORS

Red, per lb.	.05	.05
Brown, per lb.	.05	.05
Chocolate, per lb.	.05	.05
Black, per lb.	.05	.05

OILS

Linseed, city, raw	$1.90	$1.90
Linseed, boiled, advance, per gal.	.01	.01
Out of town, American seed at	1.90	1.90

PAINTS

Leads: American white, in oil, kegs; lots over 100 lbs.	14c.	14c.
White, in oil, 25-lb. tin pails; add to keg price	¼c.	¼c.
Red, bbl., ½ bbl. and kegs; lots over 100 lbs.	14½c.	14½c.
Dry Colors: Red Venetian, American, per 100 lbs.	$2.75 to $5.00	$2.00 to $5.00

Metallic Paints:	New York	Chicago
Brown, per ton	$24.00 to $32.00	$24.00 to $32.00
Red, per ton	24.00 to 30.00	24.00 to 32.00

PIPE

6 in. and heavier	$52.10†	$51.80†
4 in.	55.70†	54.80†
3 in.	62.70†	61.80†

(and $1 additional for Class A and gas pipe.)

(Discounts to jobbers for carload lots on the Pittsburgh basing card; freight rates from Pittsburgh to New York, and also from Pittsburgh to Chicago, in carloads, per 100 lbs., are 27c.)

Wrought:		
Steel: Butt Weld		
Black, ⅛ to 3 in.	50½%	57½%
Galv., ⅛ to 3 in.	24 to 44%*	41 %
Iron:		
Black, ⅛ to 1½ in.	29½ to 39 %	39½%
Galv., ⅛ to 1½ in.	2½ to 23½%	23½%
Steel: Lap Weld		
Black, 2½ to 6 in.	53½%	53½%
Galv., ⅛ to 3 in.	41 %	41 %
Iron:		
Black, 2½ to 6 in.	34½%	34½%
Galv., 2½ to 6 in.	21½%	21 %

PLASTER

Neat wall cement in 15 cent bags, per ton	$20.30	$18.50
Finishing plaster	24.00	21.00

PUTTY

In bladders, per 100 lb.	$6.25	$6.25
In 1-lb. to 5-lb. tins, per 100 lb.	6.75	6.75

RADIATION

(A further discount, effective April 4, of 15% on direct radiators, 12½% on wall radiators, and 10% on steam and hot water boilers is announced. This approximates a drop of 36% on radiators and 33% on boilers from prices in effect before the 1st of January, 1919.)

Chicago reports a 57% discount on standard heights.

REGISTERS

Cast iron semi-steel or steel, in black or white japan or electro plate and small faces and borders	40%	40%
Wall frames	40%	40%
Large faced, 14 x 14 in. and larger	60%	60%
Base board registers	40%	40%
Base board intakes	40%	40%
White enameled goods	15%	15%
Solid brass or bronze goods, except grilles	net	net
Grilles in black and white japan or electroplate in cast iron, plain lattice design—smaller than 14 x 14 in.	40%	40%
—Less than 14 x 14 in.	60%	60%

REINFORCING BARS

High carbon steel from mill	$48.50	$49.50
Medium steel from mill	48.50	49.50

ROOFING MATERIAL

Tarred Paper:

1-Ply, per ton, per roll, 108 sq. ft.	$63.00 to $65.00	$65.00
2-Ply	95c.	95c.
3-Ply	1.23 to 1.30	1.30
Rosin sized sheathing	per ton 60.00	60.00

Corrugated roofing, galvanized, 2½ in. corrugation, over flat sheets, 30c. per 100 lbs.

SAND

Mason, per cu. yd.	$1.80	$2.25
Torpedo, per cu. yd.	1.80	2.35

SHINGLES

Red cedar, 5 to 2, clear, per thousand	$8.50*	$6.50
White cedar, extra star, A star, per thousand	7.40*	5.50

SLATE ROOFING

Pennsylvania:	Quarry Station, F.O.B. cars,	F.O.B. Chicago
Best Bangor	$7.75 to $9.00	$10.20 to $11.45
No. 1 Bangor Ribbon	6.75 to 7.25	9.20 to 9.70
Pen Argyl	7.25 to 8.00	9.70 to 10.45
Peach Bottom	10.00 to 12.50	12.45 to 14.45
No. 1 Chapman	7.25 to 8.25	8.70 to 9.95
Vermont:		
No. 1 Sea Green	3.50 to 6.75	5.95 to 9.20
Unfading Green	5.50 to 9.25	8.30 to 11.05
Red	12.00 to 20.00	14.80 to 22.80
Maine:		
Brownsville, U'f'g Black, No. 1	11.00 to 12.00	14.10 to 15.10
Slaters felt, 30 lb. roll	1.75	.....
Slaters felt, 40 lb. roll	2.25	.....

SPIRITS TURPENTINE

Per bbl.	.66½	.66½

STONE SCREENINGS

Lime, per cu. yd.	$2.35	$2.35

STRUCTURAL STEEL

Beams and channel, 3 to 15 in., per lb.	2.45c.	3.47c.
Beams and channel, over 15 in., per lb.	2.45c.	3.57c.
Angles, 3 to 6 in.	2.45c.	3.47c.
Zees and tees	2.45c.	3.47c.
Steel bars, half extras, from mill	2.35c.	3.47c.

STUCCO

In cloth, per ton (white, mixed)	....	$21.50